

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER

Vol. 40.

CONTENTS FOR MARCH, 1926

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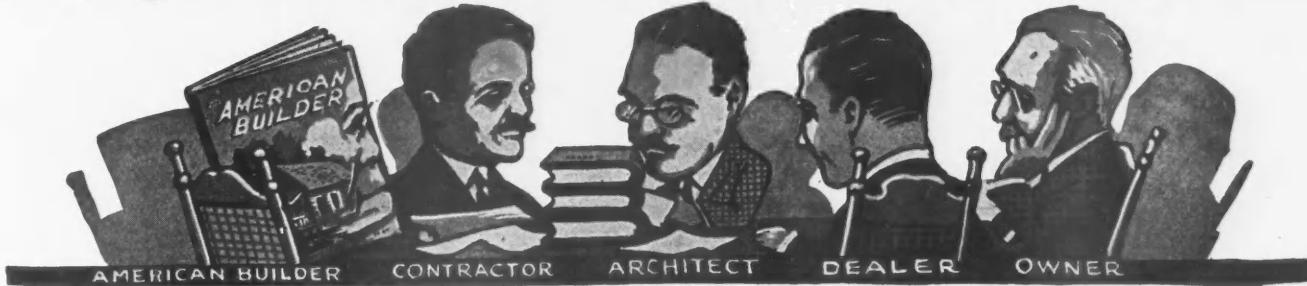
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AROUND THE FAMILY TABLE



The Annual Reference Number for 1926

will be issued next month, April 1st. This AMERICAN BUILDER will be the largest, most comprehensive and best illustrated magazine ever offered the building industry.

There will be no increase in subscription price—\$2.00 per year, 35 cents per copy.

Invite your friends to share in this. Send us your orders now. The edition of 100,000 copies will soon be exhausted.

Editor—AMERICAN BUILDER



MAIL
COUPON
for your copy

A valuable new booklet on Colored Stucco-free

Our new de luxe booklet, "The Renaissance of Colored Stucco," contains, we believe, the latest and most complete information on the use of colored stucco to be found in any booklet of this kind.

Richly illustrated with beautiful four-color reproductions of interesting homes. Pages of facts, ideas, sug-

gestions which you will find of real value in your business.

"The Renaissance of Colored Stucco" will prove to be one of the most interesting booklets you have ever read—and one of the most profitable to you.

It is free to you. Simply sign and mail the coupon below. Tear it out now

The BISHOPRIC MANUFACTURING CO.

703 ESTE AVE CINCINNATI OHIO

NEW YORK CITY CINCINNATI OTTAWA, CANADA

The BISHOPRIC MFG CO OF CALIFORNIA

LOS ANGELES

THE BISHOPRIC MANUFACTURING CO.
703 Este Ave., Cincinnati, Ohio
Please send me a copy of "The Renaissance of Colored Stucco."

Name _____

Address _____



Formerly AMERICAN CARPENTER AND BUILDER
1827 Prairie Ave., Chicago—250 Park Ave., New York City

A Significant Building Program

BILLS have been favorably reported to both branches of Congress providing appropriations of \$165,000,000 for public buildings; \$50,000,000 for structures in Washington, D. C., \$100,000,000 for new buildings throughout the country and \$15,000,000 to complete the building program ordered in 1913. The Civil Service Commission has launched a campaign to recruit approximately 200 engineers and architects who will be needed by the supervising architect's office in the execution of this building program.

In view of differences of opinion which exist in regard to the continuance of the building activity which has marked the past few years, this news from Washington is highly significant. The number of additional engineers and architects whose services will be required for the government building program indicates, even more strikingly than the amount of the appropriations, the magnitude of this program. When we consider that this construction will be spread over the entire country it is immediately apparent that, even though there should be some decline in general construction during the coming season, the government program should be ample to take up any resulting slack. With this in mind it is difficult to believe that there can be any falling off in building which can seriously affect the industry.



Progress in Reforestation

A N exhaustive survey of the forestry legislation of the states during 1925, published by the National Lumber Manufacturers' Association, reveals that the nation is earnestly wrestling with the problem of forest perpetuation and reforestation. Twenty-six of the 42 states which had legislative sessions in 1925 adopted 71 important forestry laws. These laws frequently deal with the fundamental problems of taxation and protection against fire.

"The outlook for private reforestation on an extensive scale," says the economist of the National Lumber Manufacturers' Association, "is becoming most hopeful. This survey shows that the public is beginning to do its part. When the economic position of the forest industries permanently improves, reforestation will have a great impetus. Already we have reports that about 50 great commercial forest companies have undertaken systematic reforestation. The public must learn that reforestation and forest utilization go hand in hand. Reforestation will not be helped by disuse of forest products. It is a costly process and must be made to pay its way, if it is to be carried out by private capital."



Building Activity Continues

R ECORD construction volume continued through January, according to the statement of F. W. Dodge Corporation. Contracts awarded in January in 37 states, which include about 90 per cent of the total construction volume of the United States, amounted to \$457,158,600, the highest amount ever awarded in the opening month of any year. The increase over the preceding January was 48 per cent. However, there was a decrease of 14 per cent from December, the normal decrease from December being only 5 per

cent. Last month's large total included a \$50,000,000 power plant in New York City, which brought New York's January contracts up to a third of the entire contract volume of the 37 states.

Analysis of the January record shows the following important items: \$190,847,000, or 42 per cent of all construction, for residential buildings; \$94,670,500, or 21 per cent, for industrial and power plants; \$71,321,700, or 16 per cent, for commercial buildings; \$52,922,200, or 12 per cent, for public works and utilities, and \$13,346,200, or 3 per cent, for educational buildings.

Contemplated new work reported for the 37 states last month amounted to \$851,590,300, only 6 per cent under the record amount report in December and 26 per cent more than the amount reported in January of last year.



Winter Building Increases

WORK contracted for and undertaken this past winter was much greater than usual, showing the growing belief of the building public in winter work when it is properly conducted. Labor productivity has increased and thus helped to reduce the actual cost, and the stabilizing influence of this condition, if maintained, will be very helpful for the future. Material prices have continued relatively stable as a whole. Money for building purposes has been readily available in most localities. These facts point toward continued stability in volume of operations for the industry as a whole and the American Construction Council urges that all new work possible for the winter season should be undertaken and carried to completion so as to avoid spring congestion.



A Stable Industry

WITH reports for January again showing no discernible change in building costs, the fact is once more emphasized that the industry is enjoying a remarkably stable condition and that fears of a severe reaction from the record breaking activity of last year are unfounded. The building industry in this country has entered upon a new era and can not be accurately judged on the standard of the pre-war period. The country is in a condition of healthy prosperity with no cause either for dangerous inflation or a resulting depression. Ordinary growth forms a sound basis of construction activity and with our new standards the task of replacing buildings that have served their day with the better structure which the new standards demand, should keep the industry moving forward at a steady pace for many years to come.



Correcting an Error

IN the advertisement of the Duro Pump & Manufacturing Company, 101 Monument Avenue, Dayton, Ohio, appearing in the January issue of AMERICAN BUILDER a typographical error was made in the price of the Duro automatic water softener which was advertised. The price was given as \$1.75. This was, of course, an absurd amount. The correct price is \$175.00, f.o.b. Dayton.

Eat Your Cake and Have It Too

HERE is an old saying that you cannot eat your cake and have it too, and it's true of most things. Nearly all commodities are consumed in use. Food is consumed. Clothing is consumed.

But there is a product used but not consumed. Cement is used in making concrete, and concrete is permanent. It grows stronger with age. It cannot rust, rot or burn. It endures.

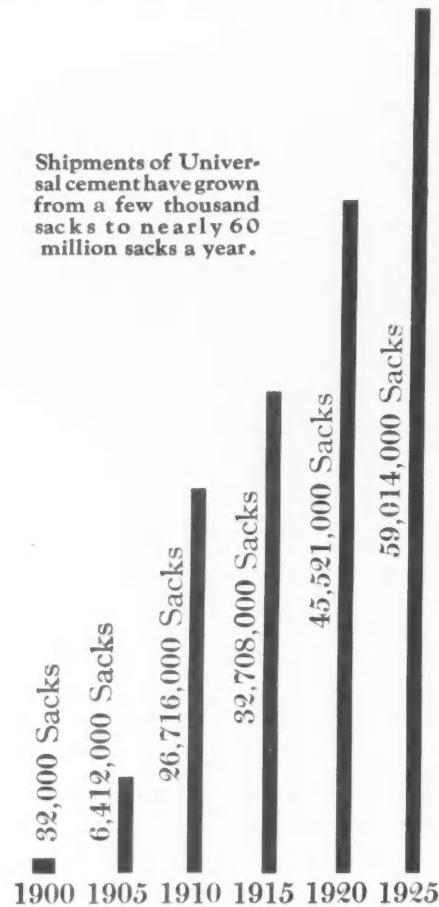
Concrete highways connect city and country. Well-paved streets and alleys are built of concrete. A grid-iron of hundreds of thousands of miles of concrete sidewalks in the United States makes walking easy. Railroads are large users of concrete. Modern buildings are of reinforced concrete. Concrete goes into many farm structures. Almost everything from chicken coops to skyscrapers rests on a concrete foundation.

The Universal Portland Cement Co. has shipped a total of 756 million sacks or about 36 million tons of cement. This would fill over a million box cars, making a train about 8500 miles long and requiring 28,000 locomotives to move it. This is enough cement to build a system of permanent concrete roads radiating from Chicago to the capital of every state in the Union.

Practically all this Universal cement—756 million sacks—still serves a use-

ful purpose. It has not been consumed but has been transformed into houses, industrial buildings, improved highways, water-power developments and other valuable improvements that form additions to the permanent, taxable wealth of the country as well as

Shipments of Universal cement have grown from a few thousand sacks to nearly 60 million sacks a year.



tools for production of additional wealth.

Universal cement, unlike the cake one cannot eat and also have, is used but not consumed.

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland New York

Concrete for Permanence

The Little Log Cabin Revised

This Man Imported Cedar Logs and Skilled Workmen From Canada to Build a Remarkable Home Close to Our National Capitol

By GEORGE H. DACY



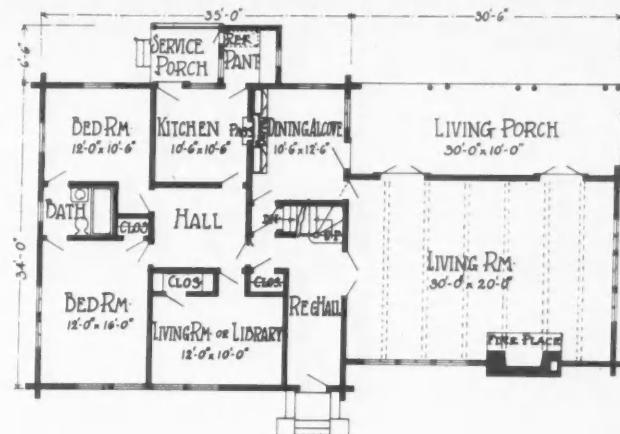
One of the Most Beautiful and Interesting Homes in Washington, D. C., Is the Residence of Dr. S. S. Jaffe Which, Though a Genuine Log House, Possesses Every Convenience and Comfort of the Finest Modern Home.

ATEN-ROOM house made of cedar logs imported from Canada stands within rifle range of our National Capitol and is Washington's latest contribution to the roster of curious construction.

This modern mansion of logs is the pet hobby of Doctor S. S. Jaffe, a prominent Washington dentist, who for many years has spent his summer vacations in the Canadian camps and woods. He became so enthusiastic about log cabins as romantic and comfortable places of abode that he finally decided to build a large log cabin provided with every modern convenience and comfort as his permanent home. Thus Washington's most recent log house came into being.

The outstanding feature about the attractive and commodious home which has been built, was its low cost. The cedar logs 40 feet long and eight inches in diameter cost only 30 cents apiece on the stump in Canada. To fell the trees, skid the logs to the river and put them together in the form or rafts for transportation to the railroad cost but 50 cents a log.

Doctor Jaffe tried to purchase cedar logs from Washington lumbermen. The lowest price quoted was \$10 per log. It was then that he arranged to purchase the cedar trees in Canada and to have the logs shipped directly to Washington from the forests where they formerly grew. No duty is charged on building material shipped into the United States from Canada in the log form, but a tax is collected if the timber crosses our border in manufactured form. By direct purchase from Canadian owners, Doctor Jaffe secured two carloads of cedar logs, delivered in Washington, at less than \$2 a log.



When the Plans Were Made the Second Floor Was to Have Been Left Unfinished But Was Later Finished for Sleeping Rooms Opening Onto a Balcony Overlooking the Living Room.

It was almost two centuries ago when the style in houses in the District of Columbia shifted from log cabins to frame and brick construction. From that day to this, the business of notching logs and fitting them together securely in cabin form has been a lost art in the latitude of America's capital. Hence, Doctor Jaffe had to import two lumberjacks to build his picturesque home of logs. He paid the transportation expenses of these experts from Quebec to Washington and return and gave the men \$4.25 apiece daily with room and board during the six months period that it took to build his ten-room house and a six-

room cabin, which the Doctor rents. The two Canadian carpenters, with several day laborers to assist them, built the two houses.

The completed costs of these two houses was less than one-third what it would have cost to construct similar buildings using ordinary lumber and following the orthodox methods customary in the eastern United States. No vermin nor destructive insects infect or attack cedar because of its peculiar aroma which is obnoxious to such insects. As a result the cedar logs used in house building do not require preservative treatment with creosote or other protective materials.

Doctor Jaffe followed neither tradition nor precedent in the design and construction of his log mansion. He did not desire



The 18 by 30 Foot Living Room Extends Up to the Roof with Exposed Log Beams, Rafters and Walls and with a Great Stone Fireplace at One Side.



A Dignified and Attractive Entrance Is in the Same Rustic Style as the General Construction of the House.

a conventional house but he did demand a comfortable house, every room of which was to stress that informal "homey" atmosphere which is often so hard to reproduce either in the palaces of princes or in the farmstead houses of ordinary country folks. Furthermore, this amateur builder wished to produce the most for the money in home comfort and year round livability in his novel house.

The foundation of the house consists of poured concrete with field stone dug on the Jaffe lot used for carrying the wall above ground. A massive chimney and fireplace, which burns logs which are five feet in length, are attractive. They are built of field stones dug on the place. A niche in

the stone fireplace at about the elevation where the mantle shelf would ordinarily appear is notable. It is a rockbound nook above the hearth adapted for the reception and exhibition of art treasures of various kinds.

The bark has been left on the cedar logs. It adds an indescribable attractiveness of appearance to the exterior of the house. In different parts of Canada, Doctor Jaffe has seen cedar log houses which have stood for more than a half century. In that northern land of severe seasonal changes, the ravages of climate have not removed the bark from the logs. The evidences are that cedar logs will similarly resist the climatic vicissitudes in the District of Columbia.

The logs were notched and fitted together as in any log cabin. After the log house frame was completed, all the exterior cracks between the logs were filled with strips of metal lath over which cement plaster was subsequently placed. This cement filler was covered with burnt umber to make it resemble the color of the cedar bark as closely as possible. All the ordinary chinks, cracks and crevices around the windows and doors were caulked thoroughly with oakum when the house was finished. Three hundred pounds of oakum were used for this purpose.



Each of the First Floor Sleeping Rooms Has a Private Porch Overlooking a Beautiful Garden and Shaded by an Awning.



Though Originally Intended for a Servants' Home This Smaller House Was so Eagerly Sought that It was Finally Rented to a Young Married Couple.

The roof of the house consists of red cedar shingles. A thick layer of fireproofing and insulating material was placed between the roof boards and the shingles. It aids in keeping the house warm in winter and cool in the summer. An oil burning furnace is used to heat the large log house. The house is one of the best insulated in the Washington neighborhood. It is so weathertight that during winter, windows have to be kept open a trifle to provide essential ventilation.

The ground floor layout centers around a spacious living room 18 by 30 feet in dimension. The roof of the house is the ceiling of this comfortable room, the roof boards being stained a nut brown color. There is a music alcove aloft on the second floor level at one end of the room. French doors open onto a wide veranda which overlooks a well-kept terraced lawn with the second log cabin at the extreme corner of the four acre tract.

There are six rooms and a large hallway on the ground floor of the Jaffe log house. Two of these rooms are communicating bedrooms with a connecting bath. This suite is shut off from the rest of the house. An interesting feature is an individual porch as an outdoor asset of each chamber. These porches front upon a beautiful garden inclosed by a rustic fence made of cedar logs. There is a

tennis court in the distance and an open air swimming pool for summer sport.

The cedar-faced mansion is located in the center of the four acre grounds. It lies midway between two paved streets. Doctor Jaffe has designed and built the house so that by a few modifications at any time, the rear and front sides of the house can be interchanged. As the house stands at present, there is an old-fashioned "log well" adjacent to the rear door which accommodates the household refrigerator. By eliminating this addition, the rear of the mansion can be remodeled as the front of the house if ever the owner wishes to make the change. This is but typical of the entire design. And yet in this comfortable, informal home, there are several



Living Room of the Small, Six-Room Cabin Finished with Plain Logs and with the Woodwork to Match.

formal conventional rooms decorated and furnished in appropriate style.

Nobody knows under Middle Atlantic conditions exactly what responses the Jaffe home of cedar logs will make to climatic and occupancy conditions. It is the first cedar log house built in our Capital City in the last two centuries. In order that he may study the various reactions of his log house to weather changes and domestic use, Doctor

Jaffe has left one upper story room in the rough and unfinished. Even the door and window frames have not been cased. In this so-called "test room," the owner is keeping close tab on the responses of his home to occupation. If, at any time, he observes that any important changes are taking place, he will immediately institute remedial measures to correct any errors or defects which may be disclosed. This, without question, is the most remarkable "study room" in any modern home in the country for it is a laboratory where the secrets of house wearability are being solved.

The log house is a two-story structure with plenty of storage rooms, closet space and a large attic. A dining alcove replaces the regulation dining room. An efficient pass cupboard connects the dining alcove

(Continued to page 143.)



There Is a Three-Car Heated Garage Under the Smaller Cabin with the Entrance at the Rear on the Lower, Hillside Level.

A Builder Who Has Won Success

His Business Is Founded on a Platform of Skill, Integrity and Responsibility

By ALINE NORVELL HANDLEY

IN 1907, J. O. Everett, then a young man of twenty-four who had had two years of college training at Bethel, Tenn., and had learned the carpenter trade as well, got off the train at Seymour, Texas, with 32 cents in his pocket. This was his total capital, with which he expected to begin his contracting operations.

Going to the best hotel in town, he stayed there from Monday noon until Thursday noon before he got a job. This job was a labor contract for a ranchman and figured the work so well that he averaged \$8 a day clear profit.

In the last few years he has built dozens of the most palatial homes in Dallas, all to order, besides doing thousands of dollars worth of industrial construction, including a \$125,000 office building at Denton, Texas, and a \$400,000 automobile house at Dallas. He is recognized as an authority on practical construction in that part of the state and is frequently called upon to give expert advice on construction by firms as far as 200 miles away.

This record of achievement can largely be accounted for by the fact that he long ago decided to live up to the three words which he took for his motto. These words are: Skill, Integrity and Responsibility.

After completing the contract job in Seymour, Everett stayed there until April of 1907, when he went to Spur, Texas, to build a \$20,000 school building. From this job



J. O. Everett, of Dallas, Texas, Though Still a Young Man, Has Established an Enviable Record as a Builder of Fine Homes.

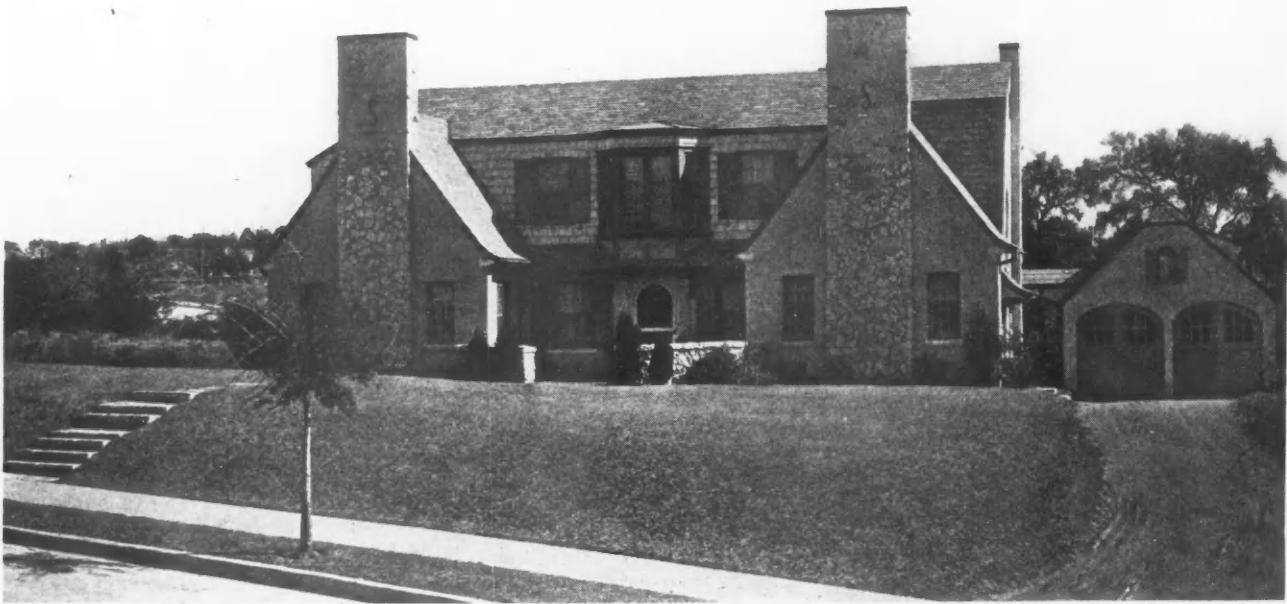
he built other public and industrial buildings in West Texas, gradually branching into the building of residences. These homes he built from various plans. For some he drew up his own plans; he hired an architect to design others. For some houses he contracted only the labor, while on others he contracted the whole thing.

In March of 1912 the young builder went to Dallas. Here, until he got started, he used his home as an office and "went after" the building of fine homes. He had made rapid progress, had every expectation of gaining real success, when an event took place that threatened to end his business career.

He had built, in 1914, four homes, putting every dollar he had and could raise into them and had them completed and ready for sale when war broke out in Europe. He found he could not sell his houses at any price. Here another trait which he had been cultivating—that of making friends—helped him out. A good friend came to his aid, enabling him to save his home from the financial wreck into which his business tumbled.

Starting over again, however, as a building contractor, he soon made good his financial losses.

Mr. Everett has always made it a point when he makes a mistake in any part of the construction of a building to admit it right away, instead of trying to cover it up, and



This Magnificent Residence of Jesse Sanders, Jr., Is an Example of the Type of Homes Which Are Being Built by J. O. Everett. The design is the work of Fooshee and Cheek, architects, of Dallas, Texas.

A Builder of Fine Homes

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says that he has always been able to adjust things better in that way than by any other method.

He is also careful to attend to all the small details so often overlooked in home building and, although he advertises in the usual channels, he gets most of his work from the satisfaction which his completed houses give. He has built four homes in succession within the past eighteen months for four of the city's leading physicians.



Living Room in the Slaughter Residence Displays the Perfection of Detail Which Is Characteristic of Mr. Everett's Work.



The R. L. Slaughter Residence Is Another of the Homes Built by Mr. Everett. The architects were Thomson and Swaine, of Dallas Texas.

A Modern Log House

(Continued from page 141.)

and the kitchen. Whenever formal dinners are served in this unusual house, the table is spread in the great living room which in many respects resembles some of the ancient banquet halls in European castles.

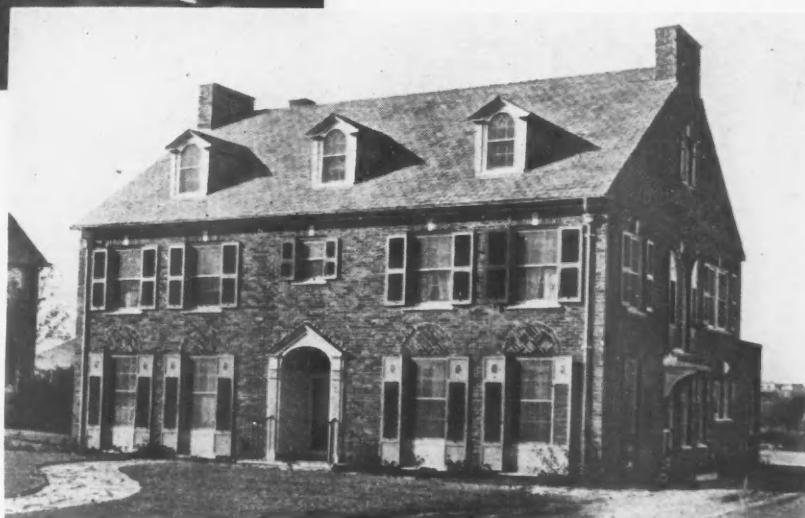
The paneling in the entrance hall and the connecting corridor, which leads to the kitchen and the bedroom suite on the ground floor, is simple and attractive. Twelve-inch yellow pine boards set in vertical position have their cracks covered with 1½-inch strips. One coat of gray paint was applied over this surface. The paint was rubbed with a cloth before it had dried. The effect is most inviting and harmonious. The natural grain of the wood garbed in a gray tone has been emphasized. This style of paneling is similar to the exterior finish of some of America's first houses during the period when sawmills came into use and facilitated the substitution of frame construction for the logs which previously had been used.



The Dining Room in the Home of Dr. Folson with a Glimpse of the Solarium Through the Arched Doorway.

As an indication of how this practical builder's integrity and responsibility are recognized, he frequently does repair jobs costing up to several thousand dollars without even being asked the cost of the completed work until it is finished.

Mr. Everett builds homes for a radius of 200 miles around Dallas. The Colonial style of architecture, Everett finds, is the most popular in Dallas, the English style not finding the favor that it has gained in so many cities. Next to the Colonial the Spanish type ranks in popularity, and brick, brick veneer, stucco and hollow tile are all used in the construction of fine homes.



Within the Past Eighteen Months Mr. Everett Has Built Homes for Four of the Leading Physicians of Dallas. This One, Belonging to Dr. A. I. Folson, Was Designed by Fooshee and Cheek, Architects, of Dallas.

New York Life Insurance Co. to Have New Office Building

On the Site of Old Madison Square Gardens—One of New York's Most Central Locations

By BERNARD L. JOHNSON
Editor American Builder

THE new office building of the New York Life Insurance Company is to be a substantial structure of fine appearance, its architecture worthy of one of America's leading insurance companies and of its architect, Mr. Cass Gilbert, who has designed so many fine buildings. Other architects of distinction are represented in this month's perspectives, including Raymond M. Hood with a splendid rendering of a new church at Beverly Hills.

New York Life Insurance Building, New York City

Cass Gilbert, Inc., Architects

The new home office building for the New York Life Insurance Company will occupy the site of the famous old Madison Square Garden, at Madison Avenue, 26th and 27th Streets. The building is set back from the property line on all sides so that the actual size of the building at the base line is 134 feet by 388 feet.

As this building will be the permanent home of the New York Life Insurance Company, it has been thought fitting that it should be of a dignified and permanent aspect in harmony with the importance and substantial character of its owner. Its main lines and proportions have, therefore, been restricted to very simple, monumental forms; the main shaft of the building has been kept absolutely plain and such ornamentation as the building has is concentrated in the lower stories where it is visible from the neighboring streets and in the upper stories which will be visible from a distance. The building is designed in the Renaissance style of architecture. The exterior will probably be of some light colored stone as such color is thought to be more suitable than any other for this style of architecture.

The main portion of the building will rise to a height of 21 stories above the street; the central portion will rise five stories higher, which with the pent-house and pipe gallery floor, make a total of 28 stories at the highest point. The total height of the building from the mean grade of the sidewalk to the top of the parapet of the pent-house story will be 427 feet 6 inches.

The rentable floor area will be approximately 900,000 square feet of which the New York Life Insurance Company will occupy at present approximately 400,000 square feet.

An arcade 22 feet wide and 38 feet high will extend from Madison Avenue to Fourth Avenue through the center of the building and a similar arcade of slightly smaller dimensions will extend from 26th to 27th streets.

The elevator equipment will consist of 36 passenger elevators for general use, two private elevators for company use and two freight elevators.

Bethany Union Church, Beverly Hills, Chicago

Raymond M. Hood, Architect

As this is a community church in a strictly residential section of Chicago, the type of architecture adopted is the English Gothic such as is found in the English country churches. The plans were drawn by Raymond M. Hood of Chicago and New York.

The walls will be of Plymouth granite, partly seam faced

and partly split faced, with limestone trimmings around the doors and windows. The roof will be of slate, with slight variations in size and color.

The tower will contain a vestibuled entrance in the first floor and a pastor's study and reception room in the second and third floors. It will be surmounted by a lead-covered spirolette.

The interior of the church will be treated very simply. The walls will be finished with rough plaster and stone trimming around the doors and around the arch leading to the chancel. The ceiling surfaces will all be formed by the exposed woodwork of the trusses, purlins, rafters and boards.

A covered ambulatory will connect the church with the existing church building, which is to be converted into an assembly hall and Sunday school building in the rear. This ambulatory, together with the new church, the existing building, and the tower, will form the four sides of a yard to be paved with flagstone. In the corner of the church and of the tower will be an open air pulpit.

The capacity of the church will be 400 and the cost will be \$137,814.00.

Everglades Apartment Hotel, Miami, Fla.

Fred F. French Co., New York City, Architects,
Engineers and Builders

This building is 16 stories in height with a six-story tower, rising 22 stories above the street; it is the largest building in Miami. It is of fireproof construction, the framework being of steel with terra cotta walls covered with stucco. All partitions are of plaster block and plaster. The architecture is Spanish and this influence is carried throughout the building with furnishings, decorations, colored and decorated tile, all with a Spanish motif.

The structure covers an area of 13,059 square feet and contains 624 rooms, divided into 313 apartments.

Stoneleigh Court Apartment Building, Evanston, Illinois

John A. Nyden, Architect

Stoneleigh Court is designed in the style of the late Tudor Gothic period, the material being a light gray pressed brick and a mottled, polychrome terra cotta. The court is entered through a handsome wrought iron and ornamental terra cotta gateway, three steps above the main sidewalk grade.

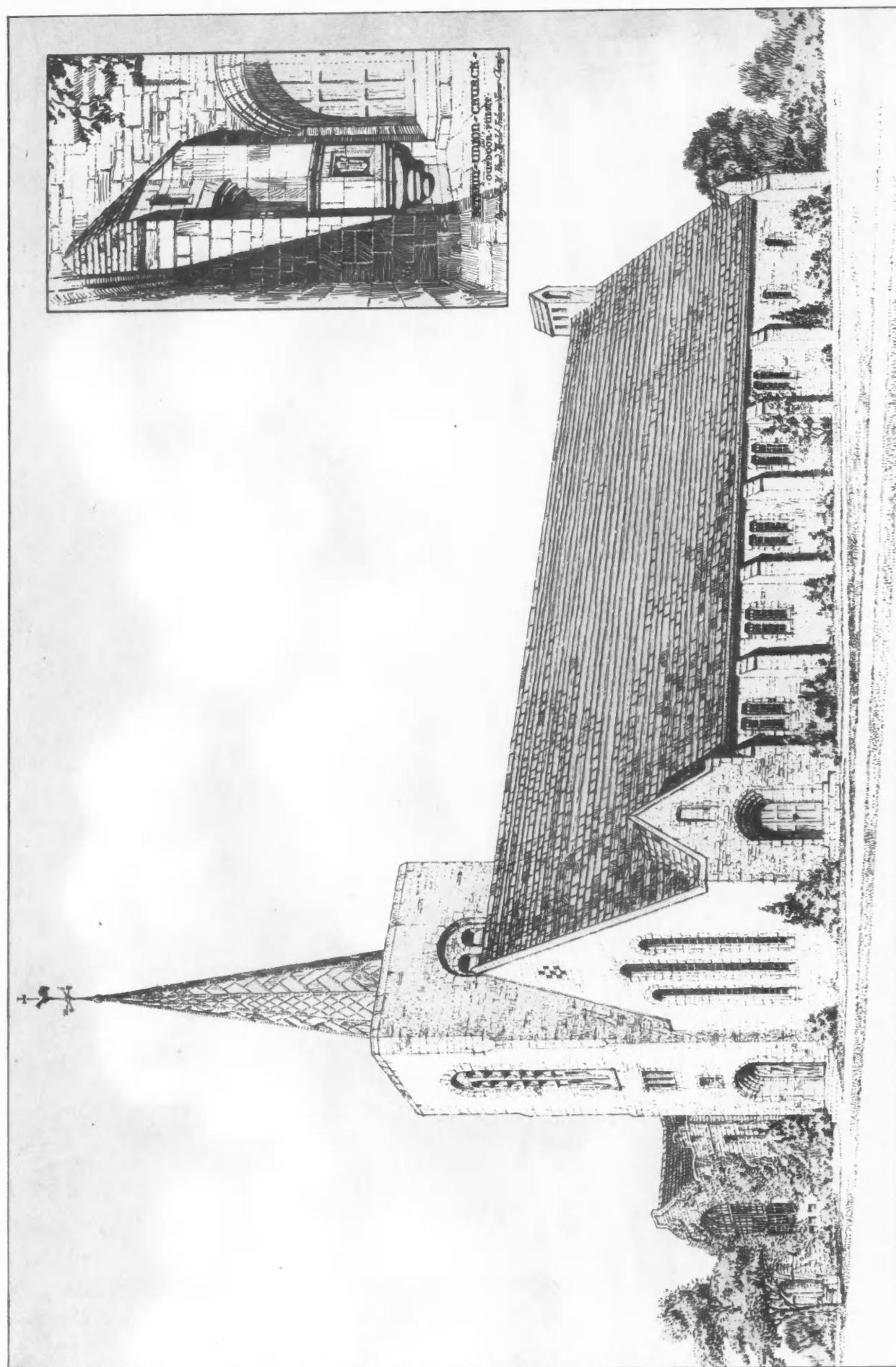
The building contains 32 apartments of four and five rooms each, the larger apartments having specially designed stone fireplaces. The woodwork is of dull white enamel finish throughout, with doors of American walnut. The reception hall, living room and dining room have canvassed, paneled and painted walls throughout the building. All hardware and electric fixtures are finished in dull silver. Bathrooms are tiled, with fixtures and accessories of porcelain and vitreous enamel. Medicine cases are white enamel on metal. Each apartment has plenty of closet and wardrobe space. The kitchens are very complete, with built-in cases, white enamel refrigerators, and cabinet gas ranges. The building is heated with two low pressure steam boilers.

ART SUPPLEMENT *of* NOTABLE ARCHITECTURE



PLATE 73

The New York Life Building to be erected on the old Madison Square Garden site,
New York City; Cass Gilbert, Inc., Architects.

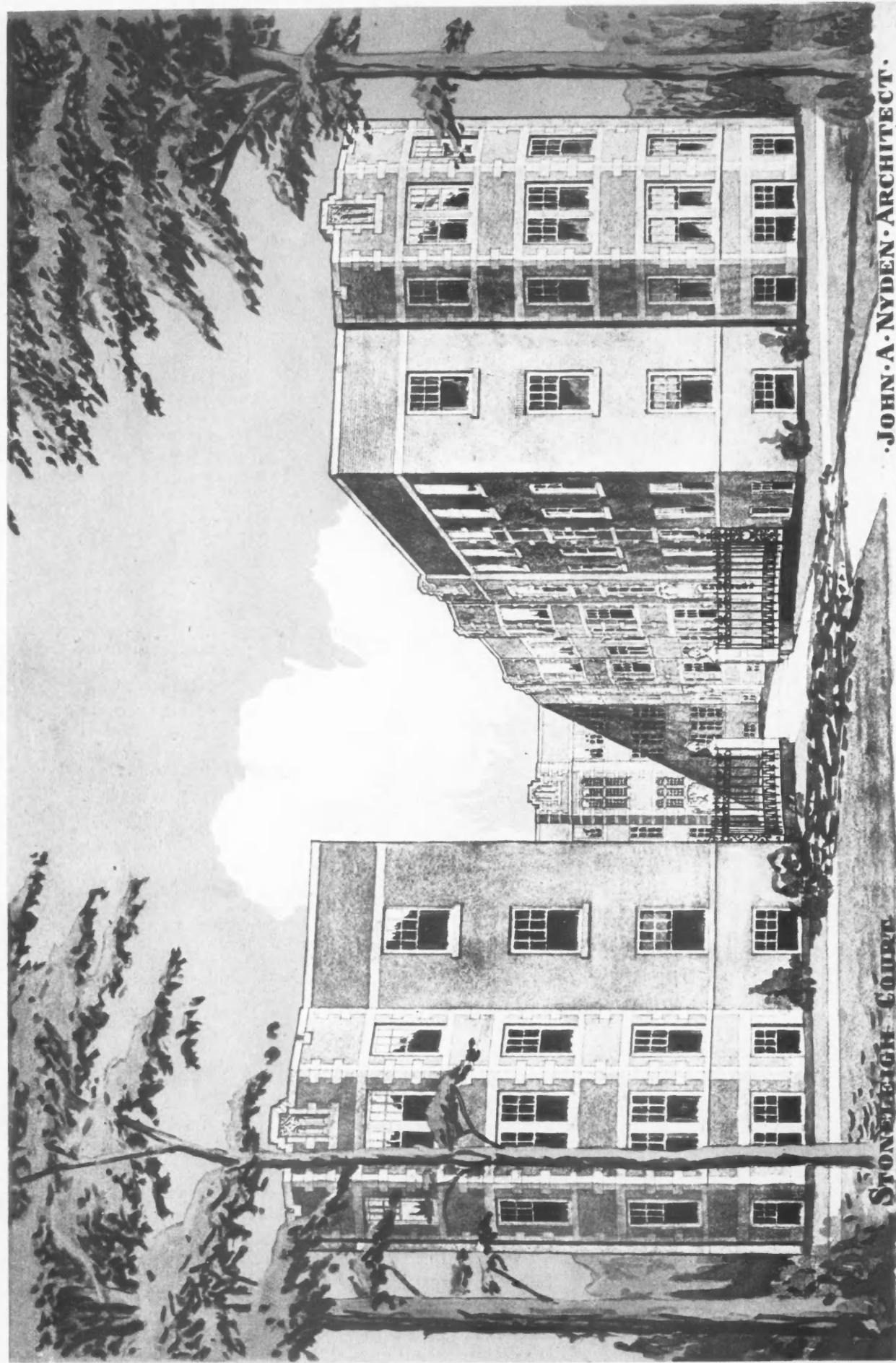


BETHANY UNION CHURCH, Beverly Hills, Chicago; Raymond M. Hood,
of Chicago and New York, Architect.



PLATE 75

*The EVERGLADES APARTMENT HOTEL, Miami, Florida; Fred F. French Companies,
New York, Architects and Builders.*



•JOHN A. NYDEN • ARCHITECT.

STONELEIGH COURT APARTMENT BUILDING, Chicago;
John A. Nyden, of Chicago, Architect.

"Progress Board"—Keeps Things Moving on Vinoy Hotel Job

By MORRIS A. HALL

WITH the opening date for the new Vinoy Hotel, St. Petersburg, Florida, announced for January 1, 1926, it was necessary to keep construction moving at a rapid pace and right up to schedule. The method adopted was simple and effective.

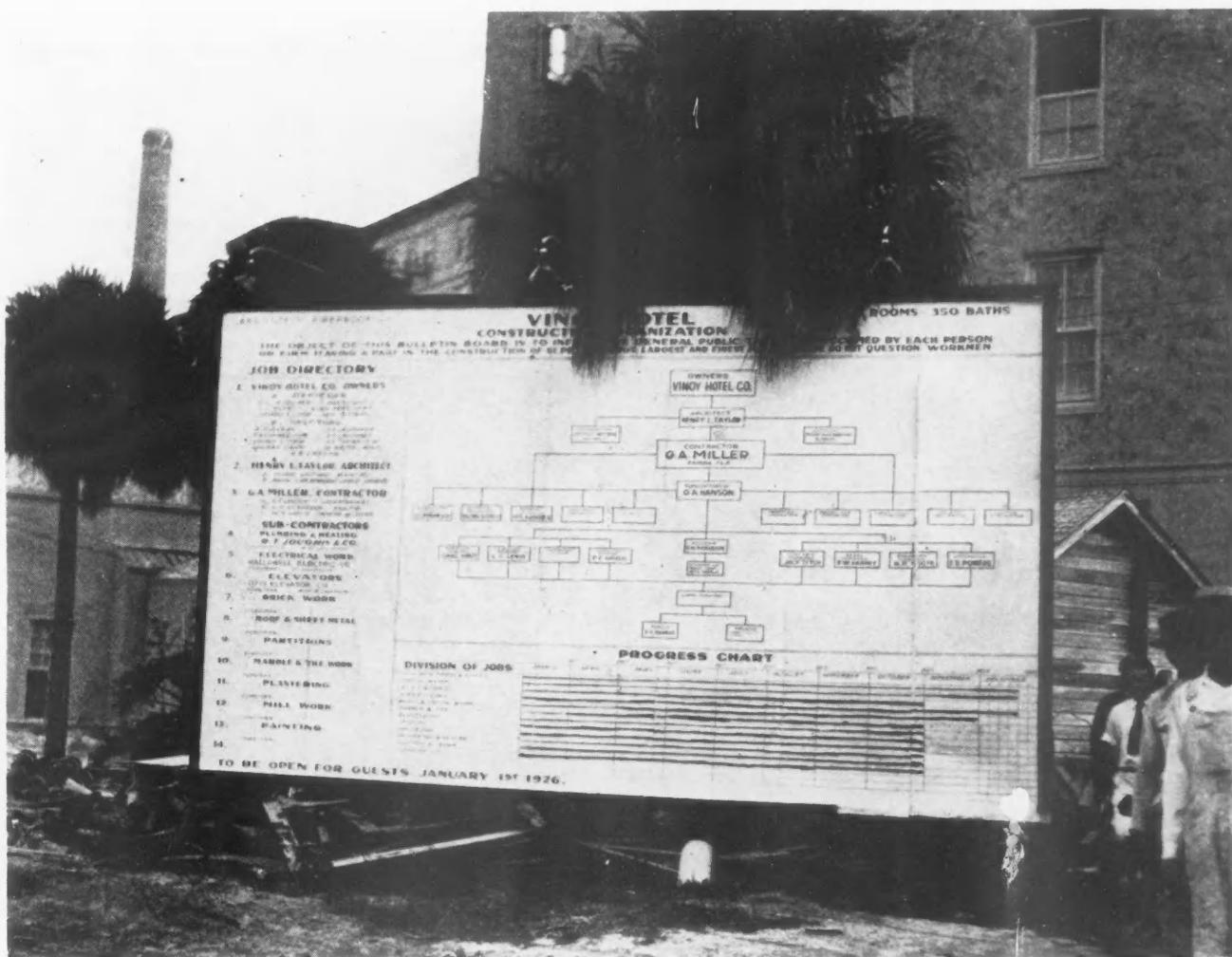
A "Progress Board" was set up on one street frontage, close to the corner, where it was readily visible to every workman coming onto the job and also to the passing public. On this Progress Board, a large sign board measuring something like 18 feet long and 8 or 9 feet high, was painted a Job Directory, an Organization Chart and a Progress Chart.

The time allotted for the completion of the building was just ten months. The Progress Chart listed the various divisions of the work in a column at the left. The balance of the space was divided into ten columns representing the ten months and each 10 per cent of the work to be done. As the work progressed on each job the percentage completed was indicated by a black line started from the name of the job and extending across the month, or per cent, columns.

This simple, graphical record created a rivalry between gangs of workmen on each job, between jobs and between contractors. The effect on the progress of the work was marked and at the time the photograph was taken, soon after the first of November when the record had been brought up to November 1, all of the 12 groups were up to date, three had entirely finished, two months ahead of schedule, and another was a full month ahead of schedule.

Nor was the pushing of construction work the only object furthered by this Progress Board. The job directory listed the names of the firms handling the work and the part which each handled. The Organization Chart showed the entire hotel organization from the Vinoy Hotel Co., owner, right on down the line. Here was publicity for all concerned, a publicity which was certain to be effective because of the interest which the progress record attracted from the citizens passing each day and watching the contest.

As a result of this Progress Board there were many people waiting with interest for the opening day of this impressive new hotel situated, in part, on filled land and overlooking Tampa Bay.



Here Is the "Progress Board," at the Vinoy Hotel Job, to Which Much of the Credit Is Due for Having This New \$3,500,000 Structure Ready for the Opening Date on New Year's Day.

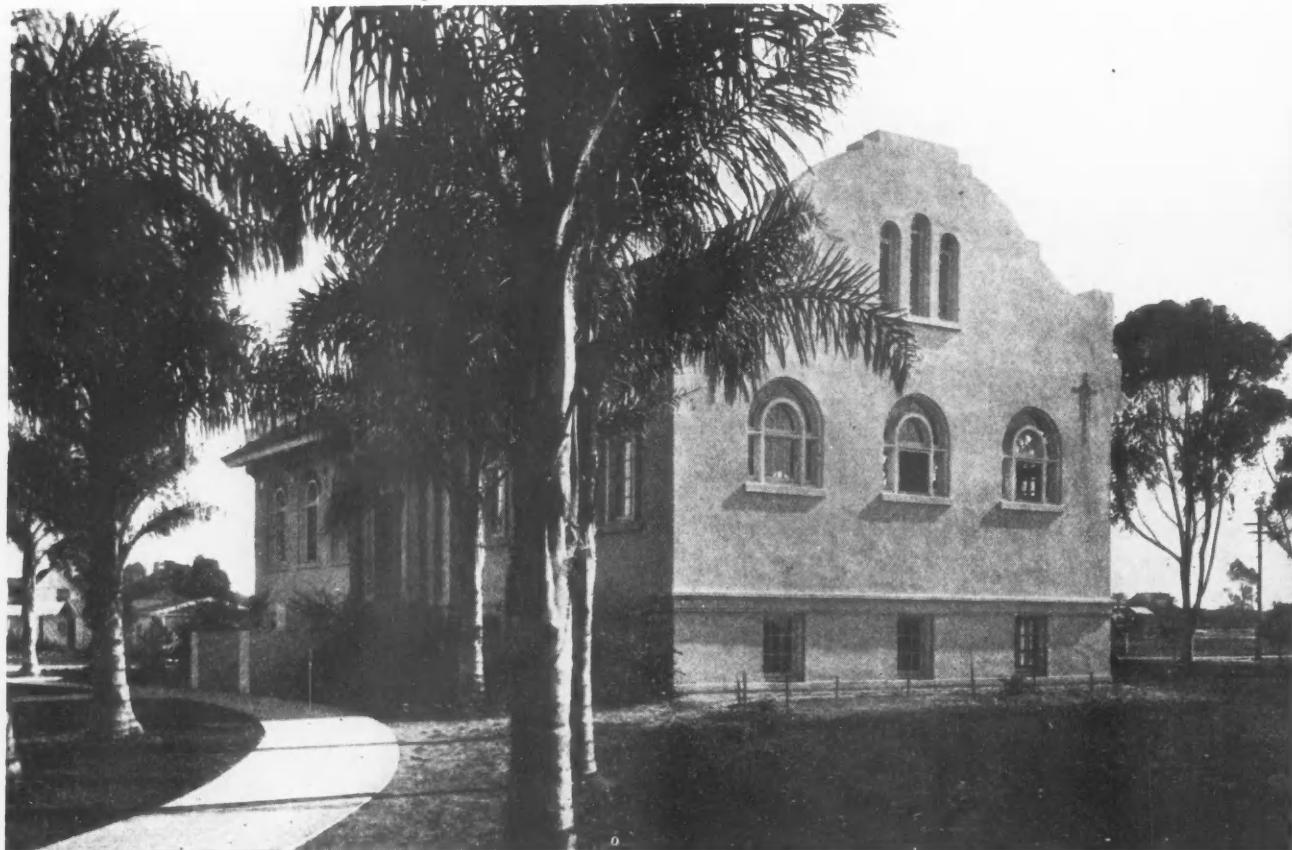
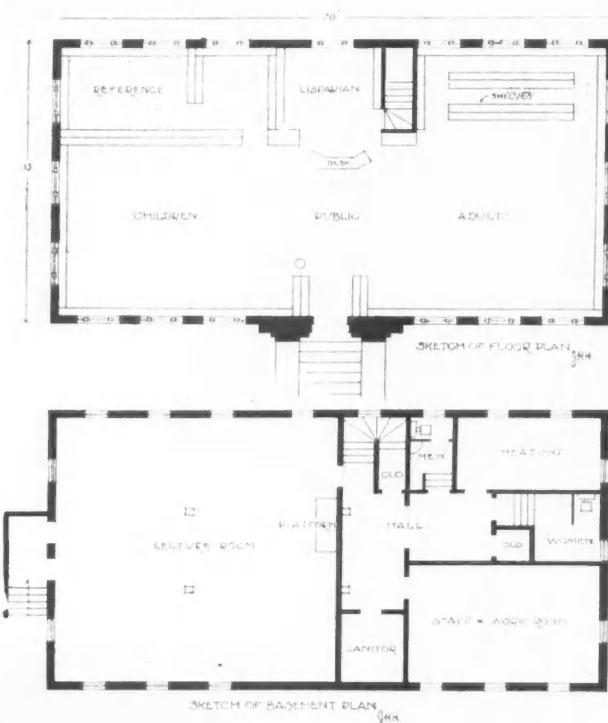
Classic and Mission Styles Blend in Chula Vista Library

By J. HAROLD HAWKINS

WHEREAS the library of a large city should be and often is, an architectural replica of the ancient Greek Classic, Romanesque, Byzantine, Gothic, or what-not style, the average small community library should refrain from absolute reproduction of the foreign and adapt its architectural self to the locale of the community. Anything so integral a part of a community as its library should be representative, to a large degree, of its following and surroundings.

The log house is out of place on the plains. The stone dwelling is foreign to localities where timber abounds and stone is not found. Flat-topped, Spanish style buildings would not do in northern states where snow covers the earth for months at a time. Nor does one wish to see stately Colonial structures blistering under the desert sun of the Southwest. It is a natural conclusion, and a correct one then, that the best and most satisfactory type of architecture for any community building is that which fits in with the surroundings. Its style and the material used should invariably be more or less native to the locality.

The library of Chula Vista, California, T. C. Kistner, architect, is an excellent example of this fitness of the community building to its environment. The stucco exterior duplicates exactly the adobe-mud of the old Spanish dwellings and the missions built in California over



At Chula Vista, Calif., the Library Takes Its Character from the Adobe Dwellings and Missions Which Were Built by the Early Spanish Settlers of the Region. By choosing this style, the architect, T. C. Kistner, has given the community a building which perfectly fits its locale. The basement lecture room, seen in the floor plan, has been turned into a children's room and the entire first floor devoted to the adult department.

An Interesting Library Design

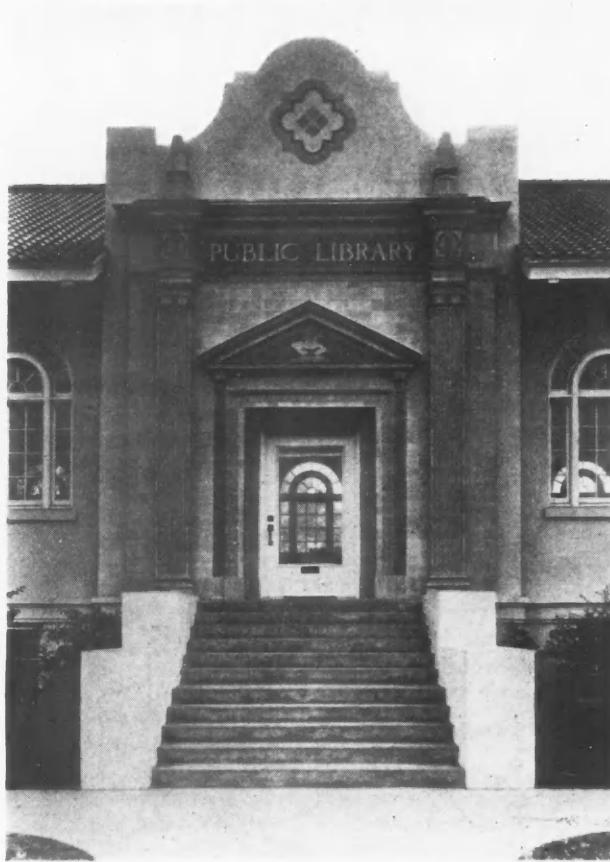
151

150 years ago. The red Spanish tiles of the roof, the colorful glazed tile motifs, and the iron grilles add their charms to the delightful Spanish atmosphere of the building. The heavy appearance of the walls, emphasized by the top of the entrance and the end walls, suggests the staunchness and massiveness of the old missions themselves.

The details of the dignified entrance deviate from purely local characteristics of southern California and Chula Vista's neighbor ten miles to the south—Mexico. This deviation is not to be criticized, however, as there are no purely local styles in any portion of this country that could adequately express the desired intellectual tone that is gained here by the use of the Classic Greek columns and the pointed pediment above the tiled entrance. They might have been suggested by the Farnese Palace in Rome, a product of the Roman Renaissance.

The windows of the half-basement are judiciously tucked out of view behind shrubbery that is set far enough away from the building to admit sufficient light to the lower rooms. This concealment of the lower story at first gives the building the appearance of being one story high, a feature in keeping with its style. An outside entrance to the basement is achieved at one end of the building. A walk curves to the front entrance from each front corner of the wide lot, and there is as well a walk straight from the main door to the sidewalk. Palm trees border the curved walks. The entire front is set out to grass with very little other shrubbery.

The unusually attractive windows are set fairly high from the floor, thus affording ample space for book shelves beneath them. Excepting on extraordinarily dark days there is never any need for artificial light in any portion



The Classic Greek Columns and Pointed Pediment Above the Tiled Entrance Have Been Blended with the Spanish Style of the Building to Form a Simple and Dignified Entrance Suggestive of the Intellectual Tone.

of the main floor. The room is surrounded by shelves, of course, and there are various additional shelves built at convenient places, more being added as required.

Further expansion necessitated by the growth of the library has been met, in this instance, by removing the juvenile department from its original place on the first floor to the lower floor lecture room. This provides added room for adult books on the main floor as well as eliminating the unavoidable noise made by children. The young folk enter their room by the lower entrance at the end of the building. Here in their new department are their own books and the room is theirs, with small chairs, tables and benches for the use of the smaller children.

The main floor is practically 70 feet across the front and half as deep. The librarian's desk is directly opposite the entrance, her office being adjacent thereto. Comfortable chairs and tables occupy the central portions of both ends of the room. A reference room is separated by shelves wherein a greater degree of

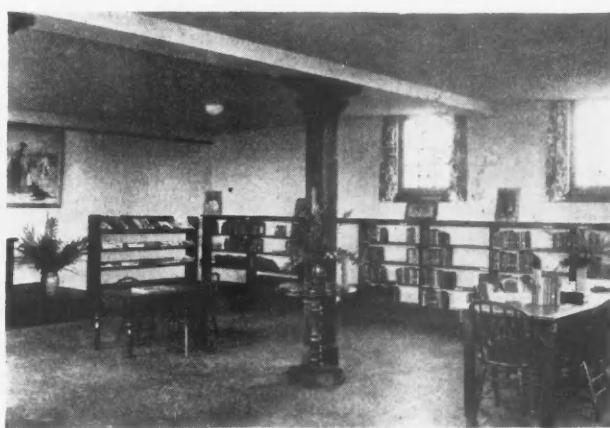
privacy and quiet reigns. A high ceiling dissipates what necessary noise is made, so that the room is studiously quiet under most conditions.

This library graces a small community. It is, however, a building of permanent beauty which many a community several times the size of Chula Vista might envy.



Don't Stop

When someone stops advertising—someone stops buying;
When someone stops buying—someone stops selling;
When someone stops selling—someone stops making;
When someone stops making—someone stops earning;
When someone stops earning—everybody stops buying.



With the Children's Room in the Basement and Reached by a Separate Outside Door, It Is Always Quiet on the Floor Above.

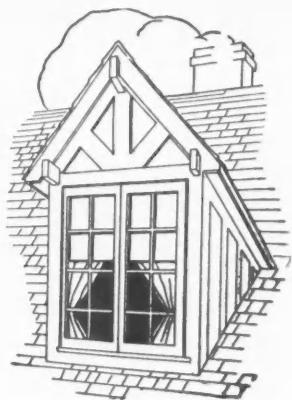


The First Floor Is Light and Airy and Attractive by Its Very Simplicity, in Keeping with Its Practical Utilitarian Purpose.



DETAILS of HOME BUILDING

by V. L. SHERMAN
Lewis Institute of Technology



Detail 12—Below the Floors

After prating so much on appearances it seems that something had better be said about the under-structure. I once told a builder who was skeptical of in-swinging casements that my fear of them was slight since I knew that when he built for me the house would be sufficiently well built all of the way up from the footings to provide against poor fittings in casement windows as the house wore.

A good house starts in the ground and not just above the grade. At the top of the opposite page is Fig 1A, B, C, and D. Starting with Fig. 1A we have a box sill, sometimes called the western type. When the foundation wall or block wall is carried up to the plate and above the ground we have, in a frame house, two wall materials. If the wall is stucco then we have one.

This difference in appearance from the outside should have some bearing on the use of sills as shown in Figs. 1 and 5. The basement of the first is generally warmer, especially if the joists are filled over the plate. And in Fig. 1 we have a natural fire-stop below the wall and a better start for framing.

In a two-story house where the wall weight per square foot on the foundation is fairly heavy and the sheathing is horizontal no anchor bolts will increase holding strength. They will, however, increase the binding qualities of the plate and insure against slips. Where the sheathing is placed diagonally, and each piece gets a grip on the plate, there is reason enough for the bolts. In one-story houses the wall weight per foot of plate is much less and there should be anchorage.

Now as regards shrinkage. One of the commonest of troubles is occasioned by settling and shrinkage. What it does to the partitions and trim is amazing. If the joists in Fig. 1 are leveled when they are laid and no account taken of the shrinkage, you will find that settling of the post on its pier, settling a trifle of the beam on the post, and the increased depth of shrinkage in the beam may work havoc with the plaster and trim later.

Taking Fig. 2 as a theoretical sample you may see that footings for the posts are of first importance. In Fig. 1B the beam shrinkage parallels the joint but rises the plate. There is a question whether the added head room as shown possible in these smaller figures compensates for the chances otherwise. And along with this should come the great importance of footings. The underside of the footings should never be anything but flat. The kind shown in dotted lines are used no doubt on some cheap work but should be carefully avoided as most anything can happen to a footing of such character.

In Fig. 3 where the studs are carried on the plate some provision must be made for a fire stop between the basement and the outer walls. Grouting, extending the sub-floor

and plastering fulfill this. The first and third insure a warm basement. Without these there is danger and a good deal of radiation of heat leading to cold floors. Again shrinkage. At times it is required to run open beams below partitions as shown in Fig. 4. This makes them more accessible for risers. Then bridging such a beam the grain of the wood should run with that in the joist as shown at L, and not perpendicular to it as at K.

The construction as shown in Fig. 5 is very common and while it does not give as good a framing base as the one shown above it, it will do very well if too much wall weight is not carried on the studs below the first ribbon. And if the wall is thoroughly insulated. And if there is a sure fire-stop. This type is one in which more chance is taken on radiation of heat and soundness of floors, but there are a number of advantages. Care should be taken to keep the plate far enough above the grade to prevent dampness with its consequences.

Fig. 6 is to show the foundation wall construction for a basementless house. If the house is kept warm the floors will be warm. Here the plate is leveled, bolted and caulked, after framing. The floor joists rest on a shoulder and are clear of the grade by enough to allow a cold air duct to travel under them or for pipes. Some means of ventilation should also be provided from inside. So long as foundation walls are being discussed suppose we consider Figs. 7 and 8. These two houses show that some consideration must be given the height of the basement wall above the grade because the house itself may not be placed promiscuously on foundation or site. Nearly every part of this house tilts the head back even while we know instinctively that such a house is designed to avoid unnecessary height.

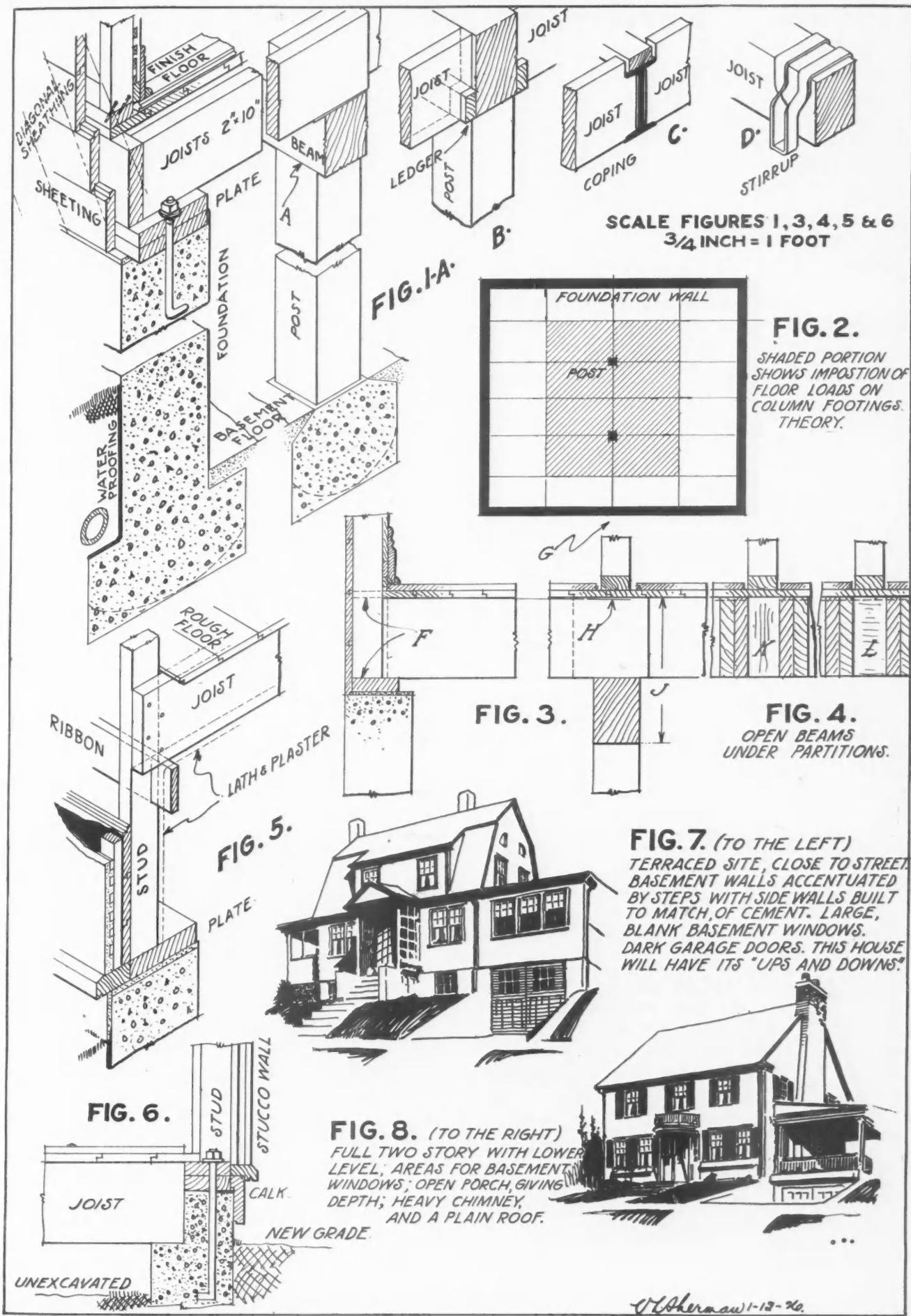
Fig. 8 gives a full two-story height but with some compensations. However, we wish to say this about basement garages. They are not wholesome things when you are in that basement. The best thing to do whenever the engine of an automobile is running is to get out from under, or to provide great open space below it. This accounts for the little bridges you see at the repair stations.



Seek Chair of Contracting

ESTABLISHMENT of a chair of contracting at the University of Texas is the aim of a campaign being inaugurated by the San Antonio chapter of the Associated General Contractors.

James T. Haile, Jr., president of the chapter, said that it is the plan to obtain co-operation of other chapters in the state in concerted effort to establish this special branch of study at the university. The course would be similar to that now taught at Yale.



Home Builders' Advertisements That Pull

By A. W. ROE

WHEN newspaper space comes as high as it now does, it behooves the home builder to put all the appeal possible into his home building advertisements to the end that they will "pull" and bring him real prospective buyers. Home builders in San Antonio, Texas, have made excellent use of display advertising. One of the best indications that such publicity pays them is found in the fact that they keep buying it. Like other cities, San Antonio began to experience a building boom about 1920. Home building has been at a standstill during the period of the war, and there was a "house famine," which the energy of the several builders soon partially satisfied.

The builders didn't want to go out of business, however, and believing in the old saw, "It pays to advertise," they have been building homes by the hundreds every year since 1920 and selling them through the agency of newspaper space mainly. In fact, some of these men build entire blocks of houses before they put any of the unit on sale; others develop whole sub-divisions, which they dispose of through newspaper advertising.

A study of their copy preparation methods ought to be illuminating. The first requirement in writing the home building advertisement is to have something to say, which

is equivalent to saying that the first requirement is to have something to advertise. The San Antonio builders have something to advertise—modern homes, substantially and attractively built, and offered at figures that appeal to the family of moderate means.

Attention to the layout of the home building advertisement is essential if the advertisement is to register strongly on the mind of the reader. Illustrations, good ones, always strengthen the message, at least, so the San Antonio builders seem to think, for practically none of them trust to words alone in getting their messages across.

Photographs, clear reproductions, were used in nearly every one of the advertisements the writer examined in making a study of a year's advertising of these Texas home builders. Photographs, however, are not trusted to entirely. Many of the advertisements give prices and terms.

"For as little as \$300 and the balance like rent"—this phrase or some such equivalent was found conspicuously played up in all the advertisements of H. C. Thorman, a builder who has constructed and sold over a thousand homes in San Antonio in the last few years.

It probably is true that any good home building advertisement is going to make an emotional appeal on the

reader when that person is seeking a home. Some advertisements are more highly charged with emotional appeal than others. One of Thorman's that rated high in this respect showed a man and woman in outline drawing, standing as though looking with longing at the picture of the home in the insert. "That's the kind of a home we want," we can almost hear the woman say as the copy continues: "It's not only the kind of home you want—the kind of home that most everybody wants—but it's the kind of community that you want to live in; the sort of community that will give you congenial friends and acquaintances that you'll be proud of. These homes will challenge your admiration. They are substantially built, scientifically planned, equipped with every modern convenience that your heart desires. DRIVE OUT AND SEE THEM TODAY!"

Another advertisement stressed the Thorman stamp of approval, as follows: "Thorman stamps every home he builds with his personal O. K.—that means, when the house is completed, it must be fully equal to the standard which has been set by this organization. Every home a builder constructs is a direct reflection on his name and an obligation which must necessarily determine his usefulness and the length of his active interests in a community. Thorman homes built years ago are today the pride of their owners. That's the kind of a home you want. That's why a Thor-

See Them Today!

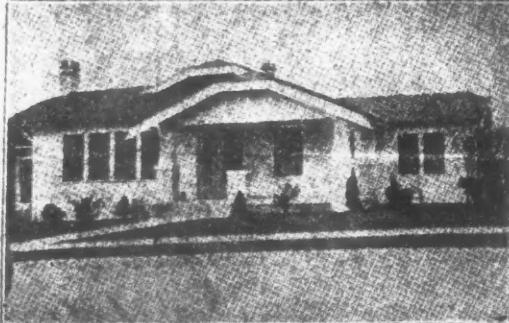
H. C. THORMAN'S MODEL HOMES

New Braunfels and Allexworth Aves. and Price St. Country Club Place



**For as Little as
\$300 CASH**

and the balance like
rent UNTIL PAID, you
can become the owner
of one of the homes.



**"That's the Kind of
Home We Want"**

It's not only the kind of home that you want—the kind of home that most everybody wants—but it's the kind of community that you want to live in; the sort of community that will give you congenial friends and acquaintances that you'll be proud of.

These homes will challenge your admiration. They are substantially built, scientifically planned, equipped with every modern convenience that your heart desires.

DRIVE OUT AND SEE THEM TODAY!
H. C. THORMAN
"THE HOME BUILDER"
Telephone Crockett 3443 125 East Travis St., Travis Bldg.

This Advertisement Ran 9 Inches Long on 4 Columns. It paid.

Thorman
stamps every home
he builds with his
personal

OK

By All Means Do Not Buy a Home Until You Have Visited

Country Club Place

In this ideal residential section just off Broadway at Alamo Park Ave., are several charming houses built by Mr. Thorman, just finished, located among new homes, surrounded by natural foliage, nice bounded parks and fine schools, leaving absolutely nothing to be desired. You can see these homes at any time, and we assure you that you will see a home of the type that fills you with an almost overwhelming desire to possess. You can see many other homes in this section, but these homes are the best. Better come out today, for tomorrow your favorite site may be owned by someone else.

Terms: 1% Per Month
of the Remaining Total after the First Payment is made

H. C. THORMAN
HOME BUILDER
125 E. Travis St. Travis Bldg. Cr. 2443

BUY NOW!

This Put a Personal Stamp of Approval on the Thorman Homes. Copy ran 9 by 8 inches.

man built home today is a thing of marked distinction. BUY NOW!"

"See the sort of home that Bennett builds," is a sentence that verily sings itself into the ken of the reader, caught from an advertisement of Sam C. Bennett, the man who developed a block of homes from a mesquite thicket in 24 months—a block that was the prize-winning block in the beautiful yards contest of 1925. The little word picture, taken from this advertisement is highly visualized and therefore effective.

"Note the hardwood floors in all, the tiled baths and the linoleum in the kitchen and breakfast rooms," the ad continues. "There are shades at every window, and draperies are up. Shrubbery is in and the lawns are fresh and green. There are new ideas in comfortable built-in features, and roomy, big closets."

Automobile dealers have agitated in their meetings recently a selling proposition that is summed up in their phrase: "Sell the car equipped." It appears that Bennett was hitting around this idea in the advertisement quoted. Sometimes it pays builders to furnish homes completely before throwing them open for inspection. A house is just a house when bare; it is not a home until furnished. The San Antonio builders, as do builders in other cities, often arrange with furniture companies to provide the interior furnishings. Then the model home is thrown open to the public, the advertising often being paid for jointly by the retail furniture company and the home builder.

During Better Homes Week this year, San Antonio builders had seven homes, completely furnished, open for the inspection of prospective owners. One of the city papers carried a special section, given over to the advertising of the homes. Each home was furnished by some San Antonio furniture company. In addition to the advertisements of the builders themselves, each of the furniture companies, co-operating in the furnishing of the homes, ran large display advertisements. The effect of such publicity could not have been other than compelling.

It is estimated that fully 85 per cent of the retail sales of the country, including foodstuffs, dry goods, and what-not, are influenced by women. That means that the feminine factor is a big one to be reckoned with in the matter of the selling of homes. Women like bargains, they want prices quoted, and they like some frills, so the home building copy must be attractively written, and, if possible, it should be emotionalized.

In addition to this suggestion, a few helpful pointers may be suggested from this little study of the newspaper adver-

\$500 CASH

All New!... Charming and Individual!... All Different!
All "Bennett-built"!... All Facing South!

In the 1600 block on West Woodlawn Avenue, high in Woodlawn Place, these pretty new homes face south, with the city lying below. They've just been completed—the paint fairly glistens with newness. Each house is

COME OUT SUNDAY AND SEE THEM

Like all "Bennett-Built," they have hardwood floors, tiled bath and built-in features, including ironing boards in each kitchen. Every one has six rooms and a breakfast room, which gives you three bedrooms. Au-

SAM C. BENNETT COMPANY
Builder of Better Homes
1429 West Woodlawn Avenue

\$66⁵⁰
Per month
'til paid for!

Another worry-saving, money-saving feature of the Bennett way of buying homes! Ordinarily, in home financing a five-year note is given, and at the end of that time the note has to be renewed and a broker's fee paid on the balance owed. This way, you buy a beautiful new home, and then pay \$66.50 per month until it is paid for—no bothersome details of refinancing.

Nothing Is Better Than Illustrating the Homes You Have for Sale. This pictorial advertisement ran 6 by 10 inches.

This Is a Home That Bennett Built!—See It Today!



Come out to Woodlawn Place today. Turn west on Magnolia Avenue. There are nine lovely new homes built by Bennett in the 1400 block of West Magnolia Avenue. This charming cottage is at 1410 West Magnolia. Come out and see them all.

"Open House" Daily From 2 to 9 P. M.—Come!

Beginning today, and each afternoon this week, through Sunday, May 3, the nine homes in this block will be open for inspection daily from 2 to 9 P. M. The man for all your home needs, some one will gladly show you all of them at your request.

The Sort of Homes That Bennett Builds!

Now the hardwood floors in all, the tiled bathtubs and the linoleum in the kitchen and breakfast rooms. There are shaded porches, sun porches, and sun parlors, and the lawns are fresh and green. There are new ideas in comfortable built-in features, and rooms, big closets.

These are the things that show. Underneath is sturdy construction and good weather resistance. And the man who pays for my materials, has a compact organization and will shortly have the compact organization of the best in the field.

Still, you can buy a Bennett-built home on conventional terms, or on option the Bennett plan of buying. It is different! And easier, too. Have one of the men over to your home. Details concerning the plan. The same payment terms can be arranged. And you will have a Bennett-built home.

Come not today, and see these fine homes. Come at this hand, why "Bennett-built" are built.

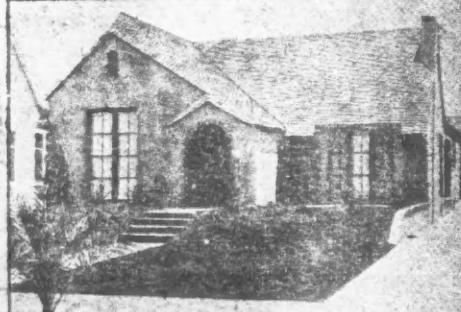
SAM C. BENNETT CO.
Builder of Better Homes
1429 Woodlawn Avenue
Phone Woodlawn 8

Reduction of a Very Effective Half-Page, 10 by 16 Inches.

tising of these San Antonio home builders.

1. As a general thing, the home building advertisement needs to be illustrated. Some builders use photographs of houses they have built, and there is no reason to think that this is not a good way to convince, because "seeing is believing." Other builders use sketches that convey a simple image of the house.

2. Plenty of white space should be used, probably more than is seen in several of the advertisements of the San Antonio builders. An advertisement that consists largely of bulky reading matter is likely to be passed over for one that has an airy, easier effect on the eye. There is such a thing as saying too much, also, as any good salesman will tell you. The layout should be attractive so



UNIQUE!

Thus are the new Bethea-built homes described. Monotonous in no detail, they are a marked departure from the staid and conventional in home-building. Ultra modern features throughout, with many never before employed offer room for boundless comment and criticism—favorable criticism, because the homeseeeker, who is after something a little different, a little better than the "best" is delighted. An inspection of one of these startling homes is a revelation of what a home CAN be. You will want one.

R. P. BETHEA
HOME BUILDER EXTRAORDINARY
Office: 1615 Huisache Avenue, Woodlawn Place

Distinctive Design and Quality Construction Featured in This Copy.

that it will entice the reader through the sense of sight.

3. If an actual house is shown in the layout, tell the reader how to reach the house, and then be sure to have it open at the time announced in the advertisement. The present writer attended an "opening," an advertised one, too, not long since in a certain city. People came, a number of them, and wandered aimlessly through the house. They wanted to ask questions about the building, but the builder was nowhere to be seen nor was his representative on the premises. The man lost some golden opportunities that evening. The San Antonio home builders do not pass up such splendid chances. If an actual house is not reproduced, then, if possible, offer a "book of plans," or some such inducement to get the reader to visit your office. Many builders find that the

free plan book is a big business builder.

Electric Heat in Bricklaying

An unusual incident that linked electric heat in a unique manner with the art of bricklaying occurred recently in the construction of the new Park Apartments being erected on Gates Circle, Buffalo, N. Y.

With the temperature hovering a little above the zero mark something had to be done to keep the mortar from freezing. The contractor laying the brickwork had a real problem on his hands. The usual heat making equipment of salamanders was not sufficient and too often drew the workmen away from their jobs to warm their hands and feet. Already pressed to meet a completion date the contractor saw that he would have to resort to some other method and with no loss of time.

An ambitious electric heat salesman, hearing of the contractor's difficulties, suggested a battery of glow heaters. This appliance consisted of a heating element and a bowl shaped reflector for throwing the heat.

The contractor was persuaded to install a battery of thirty-six of these appliances and they proved to be just the thing needed. A shaft of heat was thrown directly upon the work all the time and prevented freezing. The workmen also benefited from the warmth radiated in the working area.

The heaters were placed in wooden boxes so they could be moved from place to place without trouble and also to prevent their being damaged. A hanger was put on the back of each box. As the work progressed the bricklayer could take the outfit along and hang it up on the guard hook of the scaffold.

The contractor reports that compared with the old fashioned furnace or salamander, electric heat was cheaper.



Electric Glow Heaters Proved to Be an Inexpensive and Effective Aid to Winter Bricklaying.

Combining Beauty with Business

By B. C. REBER

PROBABLY no building has created so much comment in building circles throughout the Southwest as has the new Kallison Block in San Antonio, Texas, which was completed recently. This building, designed by Harvey P. Smith, architect, of San Antonio, is a business block. It is unusual in a building way, for it is a distinct departure from the plain commercial lines so often found in structures of this kind, and, instead, combines an attractive touch of the Spanish architecture throughout its construction.

Of worthy note is the shadow effect wrought out in the color of the bricks used in the walls. Here a harmony of colors has been created which is as attractive as it is efficient. The colors, together with the "Mission" window and the Moorish touch, give an appearance which is often desired but seldom achieved.

This building is typical of San Antonio, but it is the first commercial building, in this city of Spanish origin and history, to adopt a type of Spanish architecture in its design. Here, where the location of the old Spanish

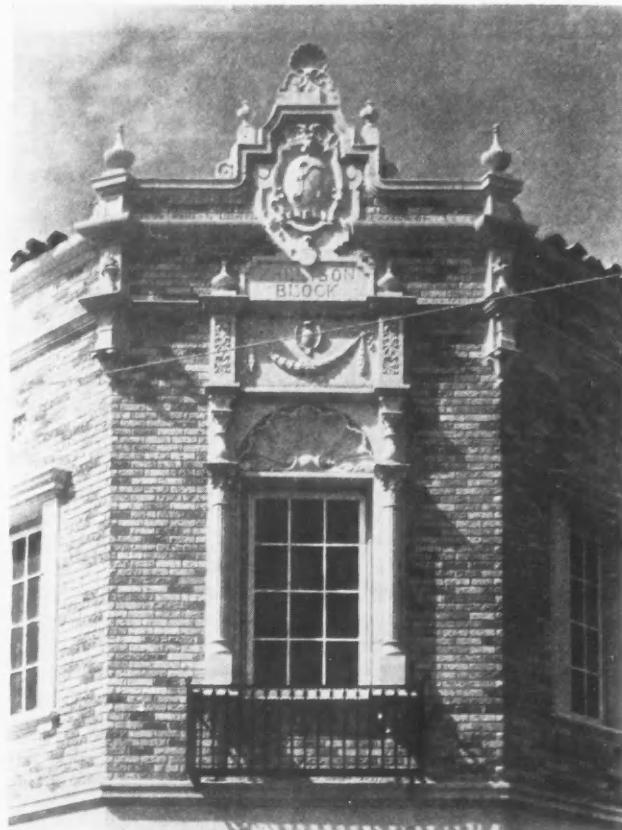
missions has written history for the city, there should be many of such buildings, yet this is the first of this kind to bring out the true attractiveness to be found in this style of architecture.

The cast stone spouts seen along the sides of the building are ornamental, giving a touch of realism to the structure. The small openings are ventilators, wrought out in an ingenious manner so that practicality and decoration are combined; the ventilators being used to prevent dry rot.

The foundation is of concrete, the excavation being made to a depth of about 8 feet in order to obtain a good bed for the supports. The walls follow general practice in their design and construction, except that they have been constructed with an eye to attractiveness as well as efficiency.

The awning along the side and front of the building is essential because of climatic conditions, and has been made as attractive as possible.

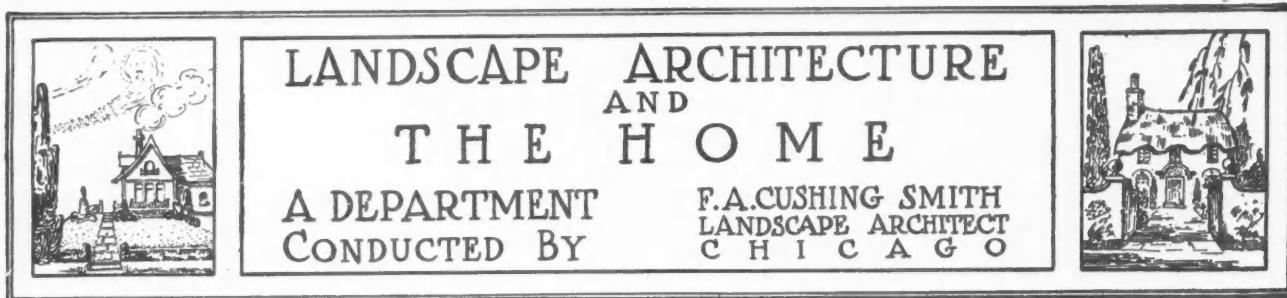
The building is a community store, having room for nearly every type of business. It is a logical building for this place.



The "Mission" Window Is One of the Features Which Gives the Kallison Block Its Appropriate Spanish Tone.



The Kallison Block in San Antonio, Texas, Is the First Commercial Building in that City of Spanish Origin to Display a Spanish Influence in Its Architecture. The result is an attractive as well as useful type of building.



Planting the Spring Flower Garden

By F. A. CUSHING SMITH, Landscape Architect

IN an old garden in Milton, Massachusetts, I remember a delightful example of garden design and planting, the picture of which can be glimpsed through the frame of a rose-covered arbor arching the walk from the rear porch of a fine Colonial home. A great elm tree shades the tea porch which for privacy was built at the rear of the house. Apple trees cascade their showers of blossoms in the early spring over the arbor which leads down toward the flower garden.

The covered walk is an inviting retreat from the blaze of the summer's sun, and beneath the seats which line its sides are kept the jars, pots, tools, and flats which are essential from month to month in the early spring planting season.

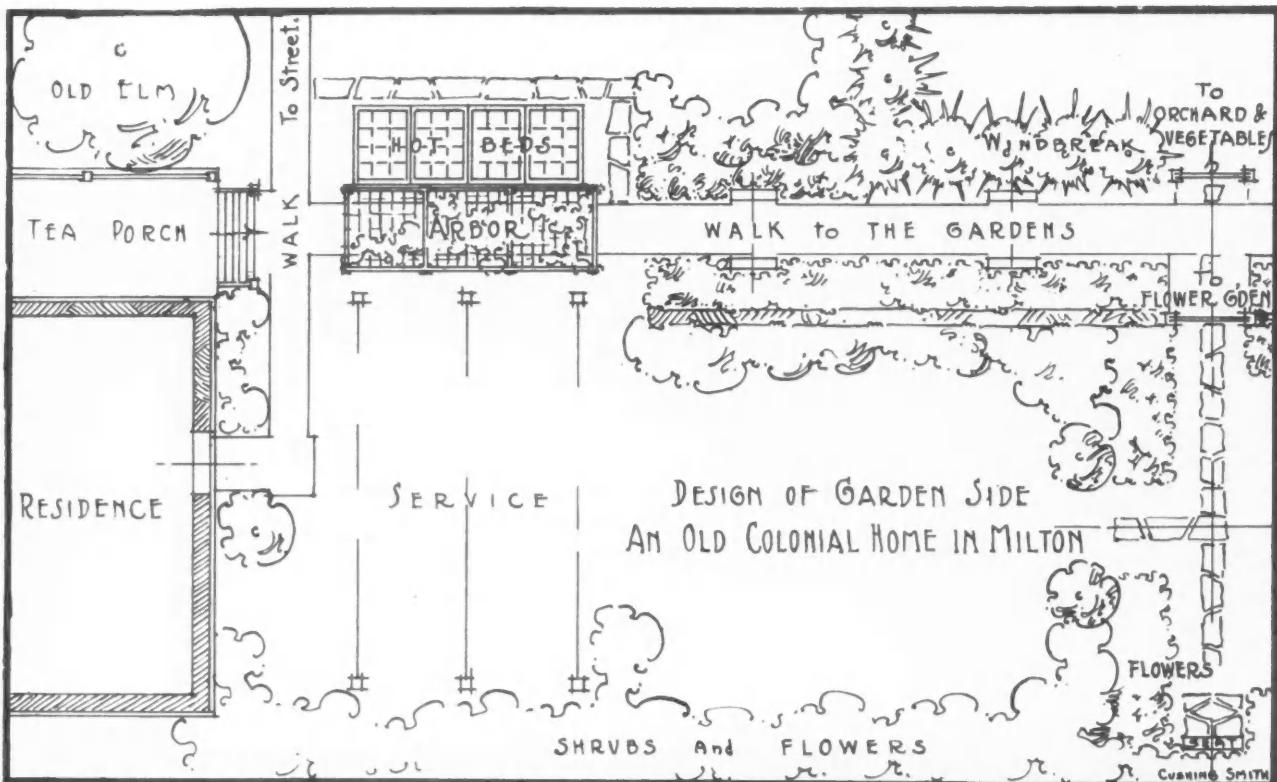
To the south side of this arbor, protected from the direct north winds are placed the hot-beds for the early forcing of vegetables and annual plants. There are radishes and lettuce in March, which were sown in the blustering days of January and February. There are rows of annual asters, phlox, digitalis, and later the cabbage seeds which supply the needs of the vegetable garden are carefully sown and tenderly watered.

At either side of the long garden path are placed the perennials, annuals, bulbs and surprise rock plants which combined to give to the air a fragrance which long lingered.

The old orchard of apple and pear trees, early in May beginning to show the first touches of color, lies at the side of the garden path protected from the cold winter winds by a windbreak of arbor vitae. Some of these old evergreens have died out and large gaps in the hedge open like caverns to display a blaze of color on the fruit trees.

The arbor or arched alley at the foot of the steps near the house is about 15 feet in length, long enough to screen from the nearby street the drying and service yard. When the roses and the grapevines have combined their tendrils, no spying eye can see the gardeners of the family as they go about their many spring duties. I could never understand the fear of detection at such pleasant tasks as gardening. Were it my garden, my pride would be so great in this my garden achievement, that I would proudly display my personal interest in its beauties, its cares and its duties, thinking thereby to arouse from their lethargy my neighbors whose chief interest in life is their golf or their motoring.

Among the flowers which we might see in this old garden along the stepping stone walk from the end of the arbor, are the fragrant mignonette, the phlox with its sturdy stalk and flaunting brilliant colors, the annual pansy with its face smiling into ours, in the early spring the blue of the violet which had been collected from the nearby woodland



Landscape Architecture

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and naturalized beneath the shade of a fine old oak. Other wild flowers have been gathered and carefully transplanted from their native habitat of leaf-mold, to a spot as carefully prepared for their reception. There are the anemone, the spring-beauty, the trillium, the blood-root, May-apple, the May-flower and the rare lady-slippers in variety.

At the end of the garden walk to the right we spy a mass of green heavy with buds. This proves upon further investigation to be a bed of peonies, without which no garden of any size can afford to be. So many varieties of this age-old favorite are now grown and perfected that we can have a range of color from the lightest tints to the darkest of maroons.

Vegetables have their place in this garden which we are visiting, and they are reached through a gateway to the left, through the hedge, about half way down from the tea porch. The area of this plot is not large but it grows in abundance enough vegetables for a family of five with much to spare for the good neighbors. In the fall the raspberries are laden with luscious fruit, the currants in reds and yellows invite the cheery robin, and the cherries at the rear have long been sought by the small boys of the neighborhood almost before the owner realizes they are ripe.

Apples in three good varieties are ever-bearing, and one or two plum trees complete the cycle of fruit. Even if fruit trees shade a bit of land which might otherwise be available for flowers, they are well worth the effort. Their blossoms in early spring, their sturdy irregular branches, and the joy of picking your own fruit in the fall make them a permanent and welcome friend to all garden lovers.

From this old-fashioned garden we will come back to the Middle West to soil and climatic conditions which are very different. This garden, the one illustrated in the second plan, was designed by the writer for use about a Colonial home, the one described and shown in the February issue of the *AMERICAN BUILDER*.

Soil preparation is one of the most important phases of a successful garden plan, and no flower enthusiast can expect to be successful more than one season unless the ground is properly prepared, mulched, and the plants staked

where needed and watered faithfully. The soil should be dug deeply with a spading fork, or if the area is large enough, plowed deeply. If the soil is a stiff clay, well-rotted manure, or compost, with enough sand to break it down, will make even the clay soft and friable. Some soils which seem dark in color, and look like good black soil, when wet are a sticky gumbo, or clay, rather than the sandy loam which all plants like.

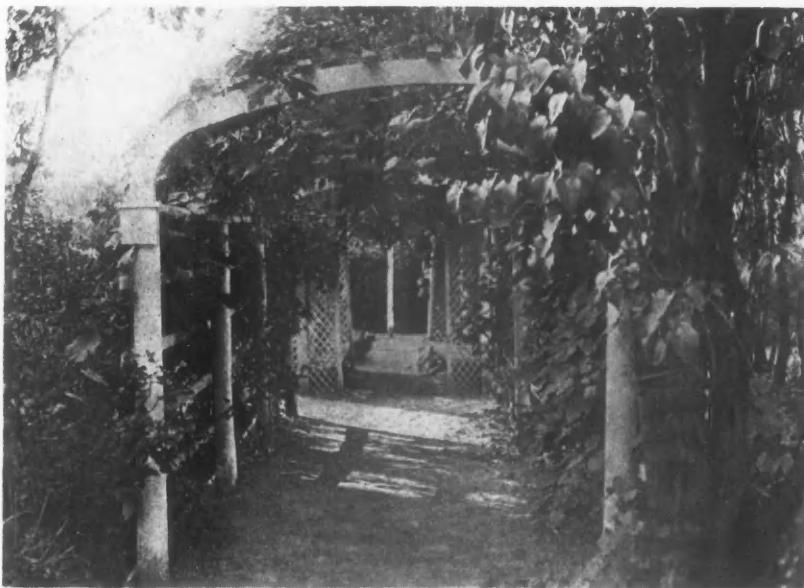
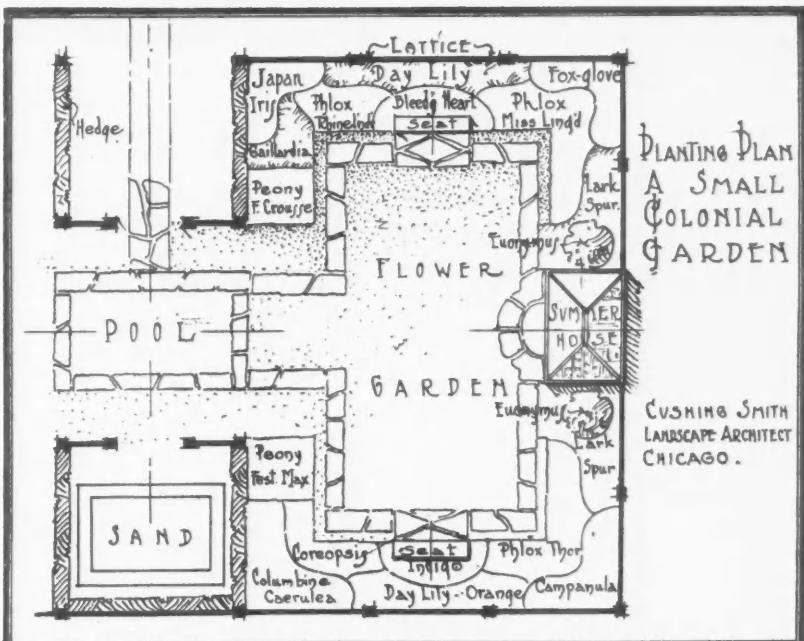
Where the soil is wet and acid, drainage by means of agricultural tile, or stone drains, will help to keep the surface layers sweet, and prevent their baking so badly. A mulch of leaves or of well-rotted fertilizer if spaded well into the surface will help to hold the moisture in a sandy soil, and serve as a reservoir for plant food as the plants grow and mature. Avoid fertilizer which is not well-rotted for it may burn the roots and stems of the tender plants.

Commercial fertilizers may be used in cases where the well-rotted manure is not available. For quick growth of grass and other leafy plants, a light mulch of nitrate is excellent. In other cases a rock-phosphate, if finely ground, will be available for plant use for many weeks. Potash can also be applied in small quantities, and in the case of roses a bone-meal makes the potash immediately available for the blooms.

Make sure that the edges of the planting areas are well dug, with all roots, debris or wood removed, and a depth of about 10 to 12 inches left friable and loose for perennials and annuals, with a depth of 18 to 20 inches for shrubs.

Looking from the garden tea terrace, near the porch, a terrace retained by a low dry wall of native stone, the interstices filled with rock plants and vines, we glimpse under the drooping branches of the cherry tree, the pool at the entrance of the garden, with the summer house beyond. Our garden is enclosed by a lattice wall and fence, giving as great an extent to the view from the house as is possible, and yet on the alley side of the lot giving privacy from the inquiring eye of the chance traveler. The vines on the lattice enclosure might be common Virginia creeper, the climbing roses, and the bittersweet toward the garage at the north.

(Continued to page 188.)



The Arbor or Arched Alley at the Foot of the Steps, Near the House, Is Long Enough to Screen, from the Nearby Street, the Drying and Service Yard.

Show Complete Apartment Before the Building is Erected

Eight months before one of the largest New York apartment houses is to be ready for occupancy, prospective tenants can walk into a completed apartment. There is no danger of falling plaster or wet paint, either. The last touch of interior decoration has been given, and the apartment is open to the most critical inspection.

The builder did not have to use a system of hocus-pocusses to accomplish this. Except for the one apartment, the building is no different than any other under construction. And this one apartment is located in an office building several miles from the apartment house.

In the good old days, floor plans were used to show prospects how their home would look after the building had been completed. If the prospect happened to be a woman who did not know about blue prints, it was unfortunate for her, and more so for the company.

In these good new days, the Keitt P. Walker Company of New York City has found a way to attract the attention of women instead of perplexing them. This company figured out that a sure way to rent an apartment in a new structure would be to erect a model show apartment within their business offices. So, instead of merely advertising the fact that an agent would be on the premises for the convenience of people who wanted to see the building, a six room apartment was erected at 383 Madison Avenue, in the heart of the business and shopping districts.

Every detail was carefully carried out. One of the features of the new building will be a large central garden, planted with evergreens and flowering shrubs. The living

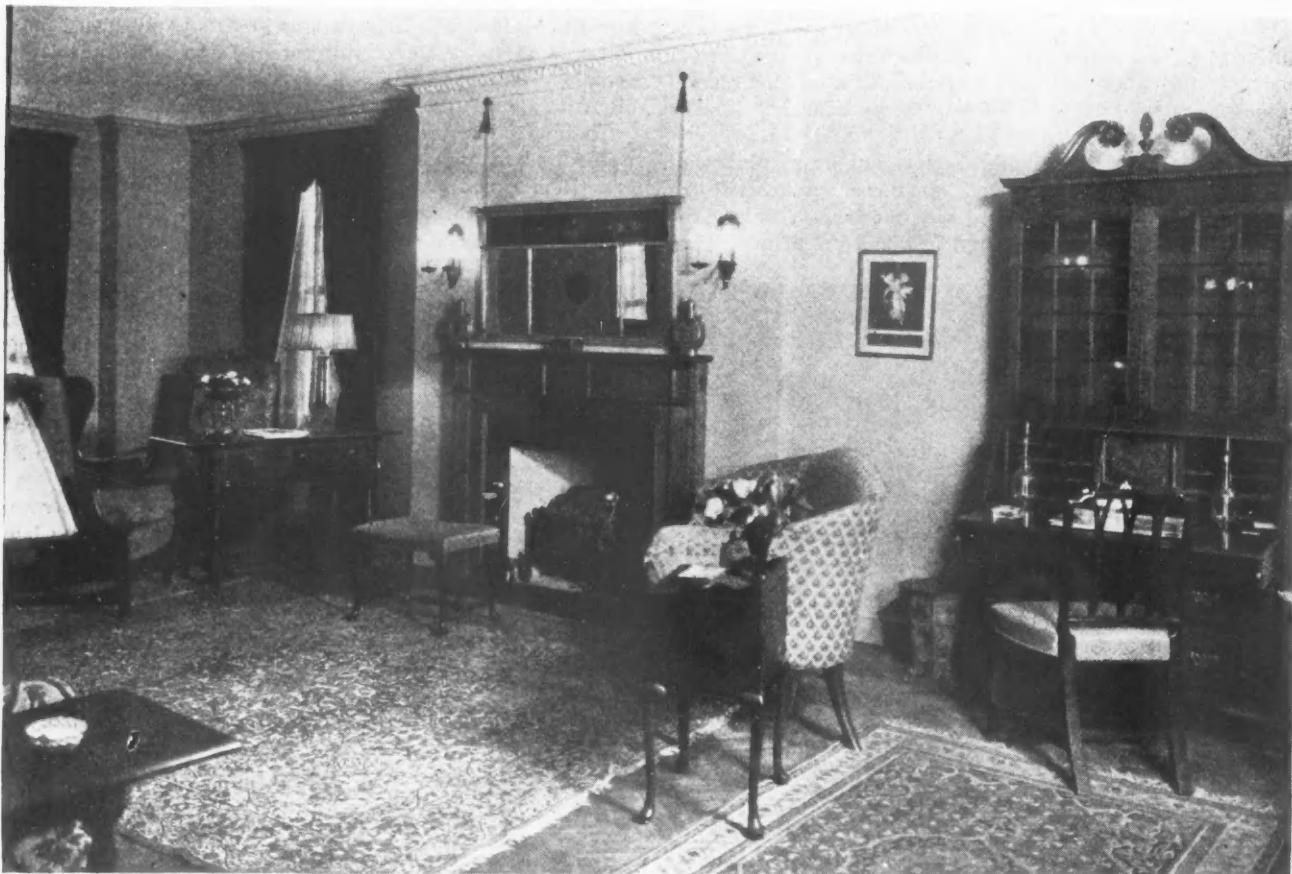
room windows of the model apartment open out on a garden, even though it had to be painted on canvas. The painted trees help the visitors to get the effect of the garden. The lighting system of the garden helps to make it look realistic.

A six room apartment was built for the model, because it was felt that one of this size would show best the layout of the larger as well as of the smaller apartments. John K. Thurton Company, the builder of the Park Avenue house, planned the model which is identical in every way with those which are being erected for real occupancy. Not a closet, nor a handle has been omitted. Every room in the model looks as though it were ready to be lived in.

The Walker Company has aimed quite definitely at the women. They believe that if they can interest the women of the family, the men can be convinced quite easily. Men may be interested primarily in the size of rooms; women want a "home-like" home. Mr. Zeigler, of the Walker Company, explained some of the principles on which his company worked in this way.

"After we had decided to build the model apartment for renting purposes, we thought that we would call in a good interior decorator to put on the finishing touches. What we were trying to do was to interest visitors, and a woman will be much more attracted by a furnished room than she is by one that is unfurnished. The average person cannot visualize how a room will look before the furniture has been put in.

"The interior decorator was called in and given the order



Living Room of the Model Apartment Which the Keitt P. Walker Company Built Within a Downtown Business Office. The model is an exact duplication of one of the six-room apartments in a new building which the company is constructing.



Apartments in This New York City Building Are Being Rented Long Before the Building Has Progressed Far Enough to Be Opened for Inspection. A model apartment in a downtown building was built to get the attention of prospective tenants.

to furnish the model apartment in the same way that he would if he was decorating it for a tenant in the Park Avenue house. We did not want elaborate furnishings, they had to be simple, and in good taste.

A furnished apartment, especially when it is located as conveniently as this one is, will draw a large number of visitors, many of them only curiosity seekers. One way that the Walker Company evaded this difficulty was to place their advertisement of the Park Avenue house and the model apartment on real estate advertising pages of the newspapers. In this way, those people who were really interested in new homes were reached. Advertisements in "The Spur," a sport magazine whose circulation is among the wealthiest people of this city, were also used. In both the newspaper and the magazine advertisements, the announcement of the new Park Avenue house was featured and the notice of the model apartment was printed in smaller type.

"Several hundred people have already looked at the apartment," Mr. Zeigler declared. "Many of them only wanted to see what we were about, but the majority were interested in the apartments. Our general method of showing the rooms was to have a man to explain the various advantages that our apartments offer. We used the same methods that are ordinarily used when a prospect is being taken through a new house. If, however, we saw that the visitor preferred to look around for herself, she was at liberty to do so.

"We installed all the closets in the model apartment that will be included in the Park Avenue house. We knew that

we would have a good many women looking at the model, and women like closets."

There are cedar closets in both bedrooms, exactly the same size as they are to be in the completed building. The kitchen boasts sufficient closet room to please the most critical. Such conveniences as electrical cooling systems are installed in the model.

"We did not erect the model in our offices because the building itself was inaccessible," Mr. Zeigler continued. "What we tried to do was to save time in renting. There could be no show apartment in the building for several months. And also, when prospects called upon us, in our offices, we could make double use of their visits, by immediately taking them into the model. We did not give anyone time to promise that they would 'look at the apartment some other time.' When you have the actual thing that you are trying to sell in front of your prospect your sale is about three-quarters made. A man who is trying to sell a thoroughbred dog does not like to show a picture of the animal to display his good points. He brings out the dog itself."

To build the model apartment 2,200 square feet was needed. The Walker Company has been planning this "stunt" for some time, and they were prepared to give the required space. Only a few desks and offices had to be moved to one side. As it stands now, the model has an entrance hall from the private elevator, a foyer, living room, dining room, two bedrooms, each with private bath, a maid's bedroom with a folding bed which goes into a closet, kitchen, and butler's pantry.

The Walker Company always handles high grade real estate, and the average layout of the apartments does not change

(Continued to page 194.)



The Foyer in the Model Apartment. This apartment was completely furnished in order that the prospect might see just how his future home would look.

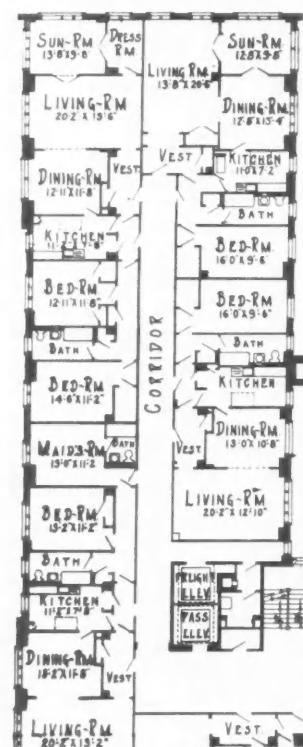
A Modern, Commodious Apartment

WILLIAM N. BOWMAN CO., Architects

"THE NORMAN" is possibly the handsomest as well as one of the best planned of Denver's newer apartments. The builders had in mind the construction of something that would appeal to those who wished more commodious housing than is usually provided in buildings of this sort with ample light and air, so "The Norman" was first of all given a site of very generous size in the country club district, away from all other apartments. The large corner with south and east frontage, together with a plan which is "L" shaped, gives nearly all of the apartments at least one sunny exposure.

As will be noted from the plan of a typical floor, the corner apartments utilize this through the inclusion of a sun room. Some of this type are arranged with a dressing room adjoining the sun room, so that the latter may, if need be, serve as an extra bedroom.

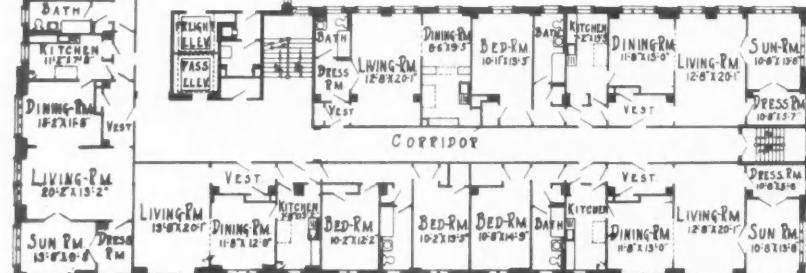
Although there are a few units with the living room combined with a dressing room that contains a disappearing bed, most of the suites have living room, dining room, kitchen, bath, and one or two bedrooms. Only one apartment on each floor adds to this scheme a maid's bedroom, as there are especially planned accommodations for maids in the basement.



The bedrooms are approximately 12 feet by 14 feet in dimension and the living rooms a bit over 13 feet by about 20 feet. The large size of these rooms is one of the distinctive and attractive things about "The Norman." Another distinction is the large garage at the back of the site for the accommodation of the tenants' cars. This is in the same style as the main structure.

Construction is of reinforced concrete with facing of tapestry brick in tones ranging from light to dark brown with a touch of light green in some of the brick. Stairway and hall floors are of cement.

Though Compactly Designed, These Apartments Are Planned to Be More Commodious Than the Type of Small Apartment Which Has Been Characteristic of a Large Portion of the Recent City Construction.



The Norman, One of Denver's Newest Apartment Buildings, Was Designed by William N. Bowman, Architect, of Denver, Colo., and Is One of the Noteworthy Buildings of That City.

Sni-A-Bar Gardens—A Wayside Inn

A Charming Rural Hostelry in the Style of the English Tavern of Coaching Days

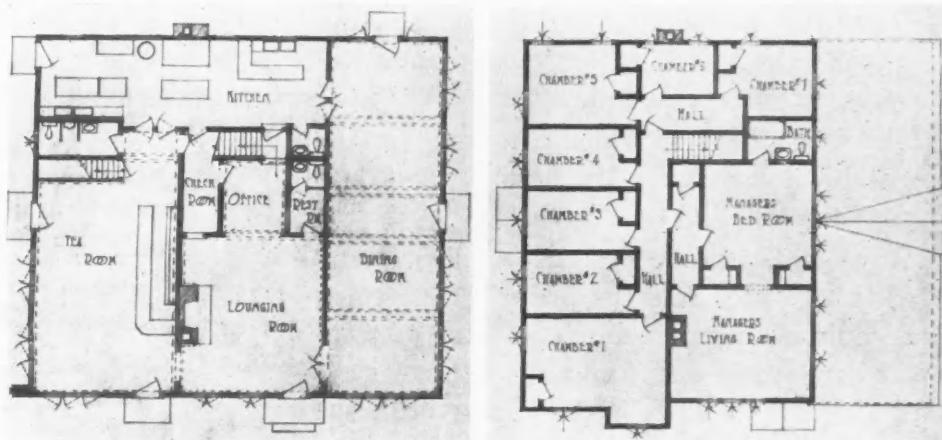
By DEVELLE THATCHER

SNI-A-BAR GARDENS, a recently completed country dinner inn, located at Sni-A-Bar road and Blue Ridge boulevard, about five miles from Kansas City, on the St. Louis Highway, has a setting and features which suggests an old English wayside tavern. Although the ground floor dimensions are only 58 by 50 feet, yet the inn has a huge rambling effect. Albert B. Fuller, the architect, has given the place the charm of the old picturesque hostelry that dotted the high roads of Sussex and Kent during the days of coaching. It was built at a cost of \$15,000 and contains 3,000 square feet of space.

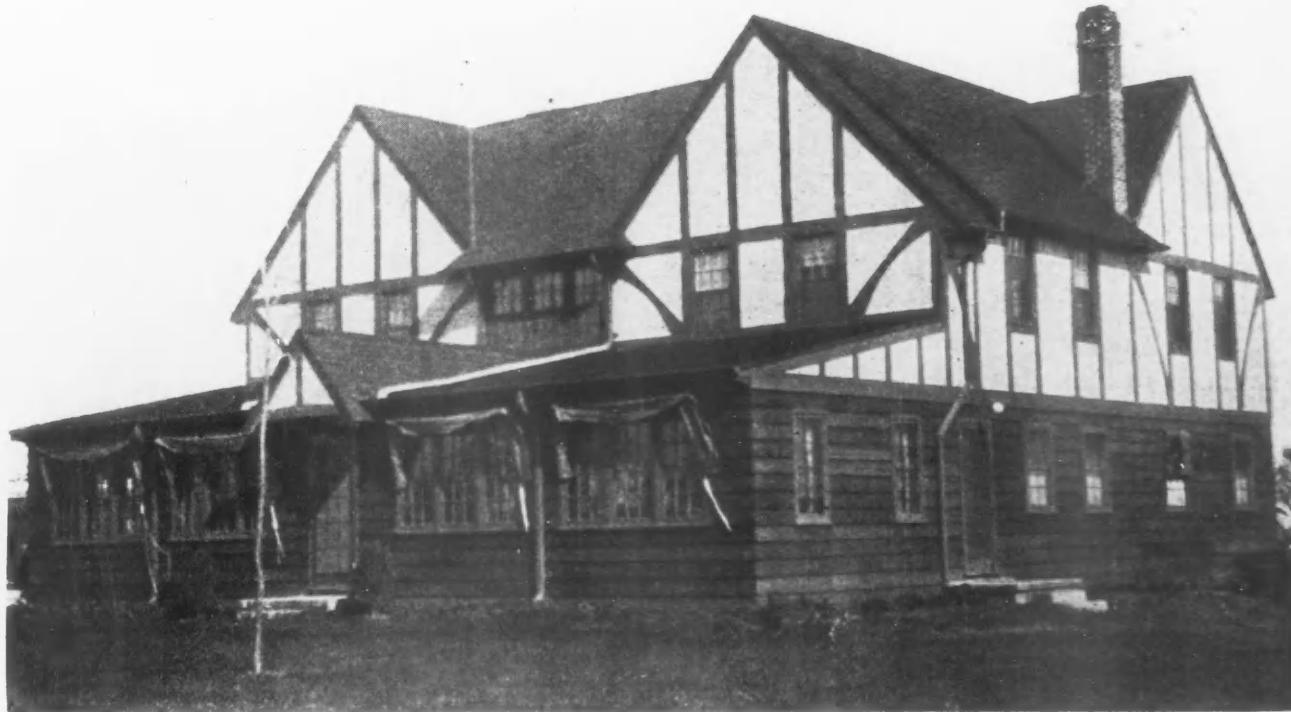
The pastoral feeling is achieved by surrounding the establishment with five acres of lawn and gardens. Also the rough siding stained a nut brown on the first floor and the half-timbered effect with the troweled stucco above gives rural, rustic interest to the edifice. The stucco is colored in warm ivory and contrasts well with the variegated brown shingles on the roof. An oriel in the front, hooded entrances and casement windows are intended to lend some of the charm of the inns of Shakespeare's time. The interior is floored throughout with oak.

The interior is well arranged with a large central lounging room directly within the main entrance. Here is a large fireplace before which guests may enjoy a cheerful blaze while waiting for their meal to be served on a chilly evening or lounge in comfort after partaking of a hearty meal. At the rear of this lounging room is the office, check room and ladies' rest room. From the office a stairway ascends to the upper floor.

On the upper floor a suite, consisting of living room, bedroom and bath, is provided for the manager and there are seven other rooms one of which is occupied by the chef.



Guests May Choose Between the Main Dining Room and the Tea Room as the Place for Serving Their Meal and May Await Its Preparation Before an Open Fire in the Lounging Room.



Situated on One of the Principal Highways Leading Out of Kansas City, Missouri, in the Midst of a Five-Acre Setting of Lawn and Gardens, Sni-A-Bar Gardens Achieve, to a Marked Degree, the Effect of an Old English Tavern of the Days When Travel Was by Horse Drawn Stage and the Wayside Inn an Essential to the Traveler.



Homes in COLORS

How Beautiful Home Designs Help

By WILLIAM A. RADFORD

*President and Editor-in-Chief
of the American Builder*

PEOPLE have **to want** a thing before they will spend their money for it; and the more they want it the more money will they be willing to spend.

This is a universal principle in merchandising and it holds true in the building and buying of homes.

How should home designs be illustrated? Shall we picture only the plain, little cottage and show the lot ungraded and bare of trees and shrubs (as we all know many houses are built)? Or shall we picture the ideal, the home that is really inspiring to look at, and show it completely graded and landscaped and embellished with every feature that might appeal to the longings and the hopes and the day dreams of the prospective home builder?

Perhaps you have thought or said—"Give us cheap houses, the folks around here can't afford to build the expensive homes you illustrate"—but is that the right way to look at this matter?

Some of the homes we illustrate are, of course, expensive; on the other hand, many of them are very inexpensive. But all of them are presented in an ideal way. They are made to look their best—first, by proper design of the house itself and then by skillful landscaping to bring out the good points of the design. **Our purpose is to stimulate the desire for home building and to cause better homes to be built.**

The value of this principle in promoting the sale of homes was very forcefully expressed by a well-known lumber dealer of Peoria, Ill., Mr. J. W. Mackemer, president of the Illinois Lumber and Material Dealers' Associa-

tion, at their recent annual meeting at the Edgewater Beach Hotel, Chicago. The subject of "Plan Books as Selling Helps" was being discussed. Mr. Mackemer said that in his experience he found the most attractive home designs the most useful.

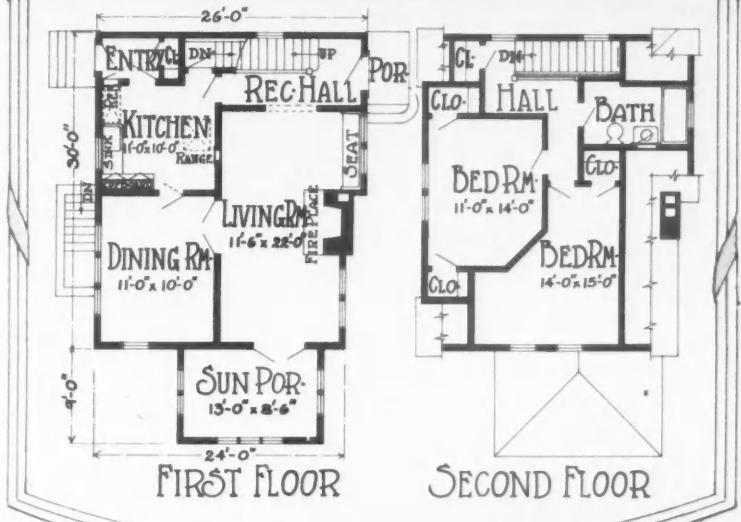
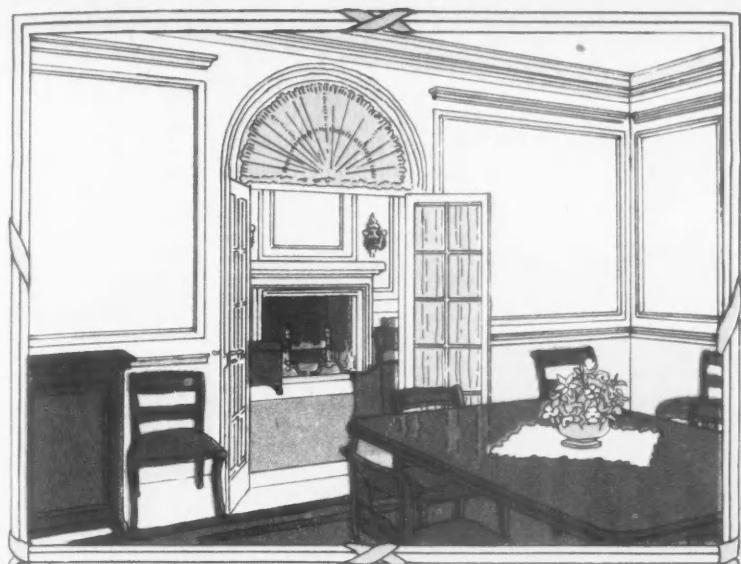
"A good attractive home design," he said "is a 'come on.' It's a good deal like a \$2,000.00 dress creation which I saw the other day at Marshall Field's. This dress was imported from Paris and was displayed in a special case of glass and gold. It was priced at \$2,000.00; but I don't believe they expect to sell it. It is a 'come on' and works like this: A woman goes into the store, expecting to pay \$25.00 for a dress and after seeing this \$2,000.00 creation, her ideas are enlarged and she isn't satisfied any more with a \$25.00 dress but actually buys one for \$50.00. Another woman comes in with the idea of spending \$15.00 for a dress and, after seeing the \$2,000.00 model, she experiences a similar education and concludes that about \$30.00 would be a better price to pay.

"So it is with these house designs. These beautiful designs are educating the taste of the home builders in our community and are making them want better homes and are making them more willing to pay a proper price to get beauty and modern conveniences into the homes that they actually build."

So it is with these designs presented each month in the American Builder, especially in our department of Sixteen Pages of Homes in Colors. These designs are creating a market for better homes and are helping contractors, builders, dealers and architects in their work of promoting better home building.

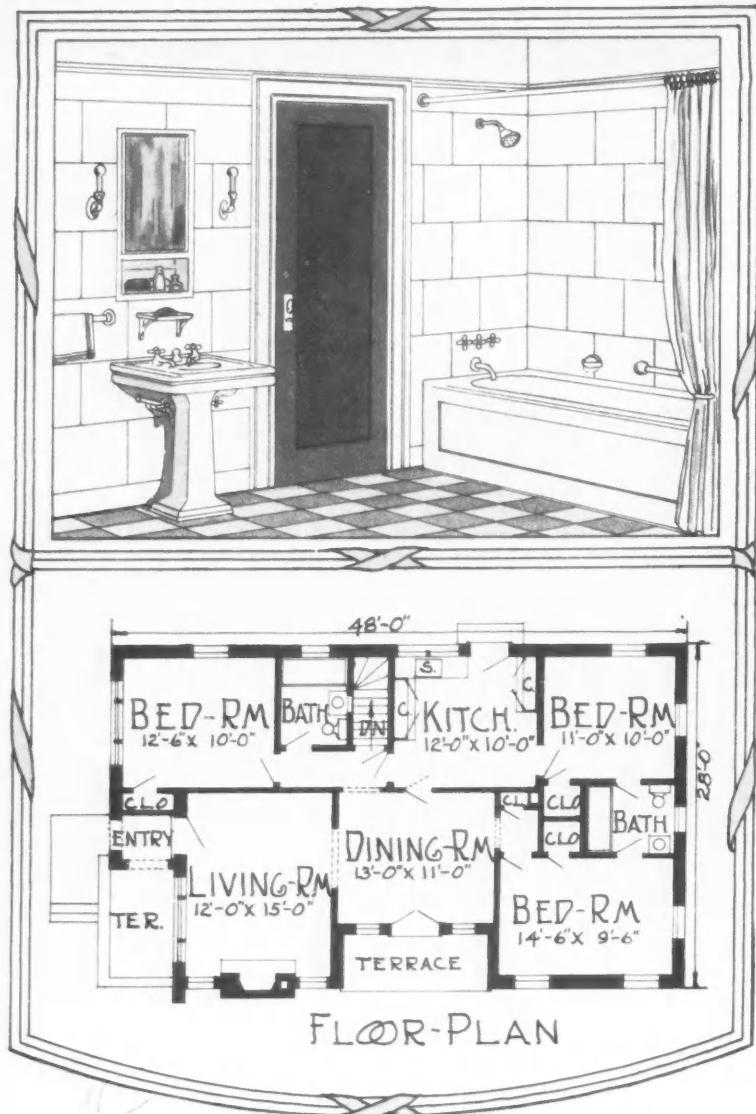
The RADIUM

AN English cottage of six rooms, sun parlor and bath, 26 feet wide by 30 feet in depth, not counting the sun porch which projects 9 feet. The steep lines of the roof, the half timber paneling and stucco in the entrance gable and the quaint chimney give this house its distinctly English appearance. The interior is arranged in a very satisfactory way with no wasted space. Color sketch to left shows a rich paneled treatment for the dining room with a glimpse through the French doors to the living room fireplace. Below is a vine arbor for the home grounds.



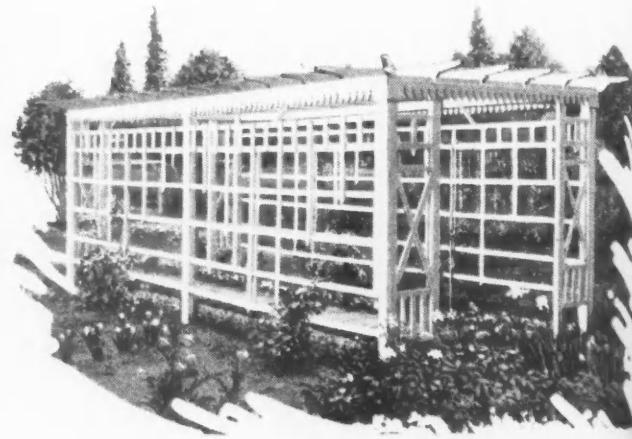
Pat. March 15, 1921 and Sept. 30, 1924.
Copyright 1926. Wm. A. Radford, Chicago.





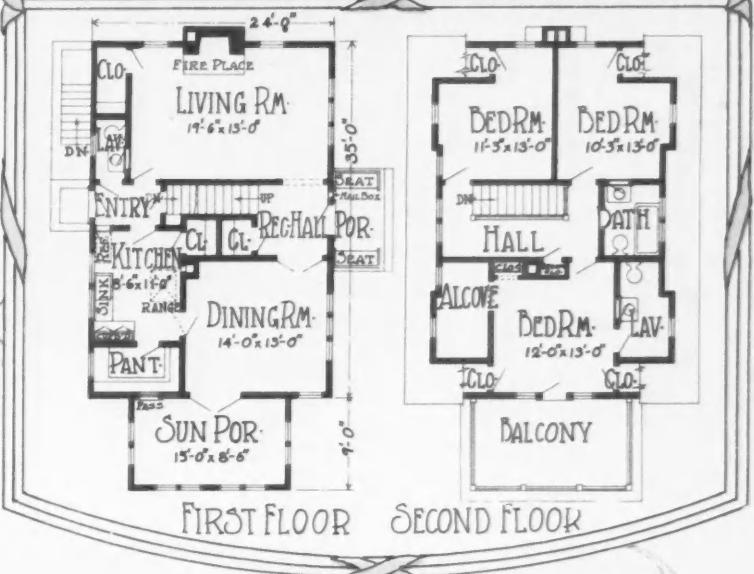
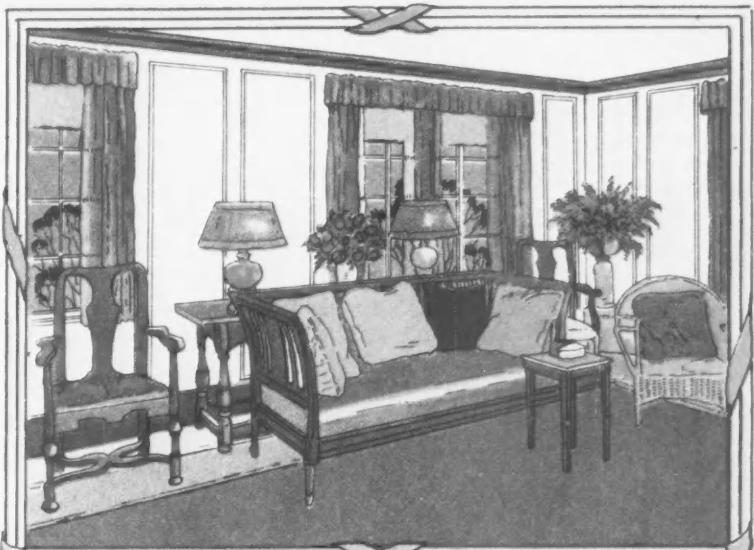
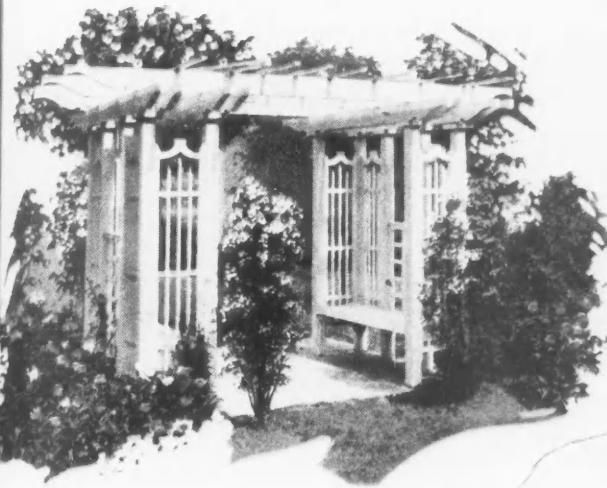
The RIO GRANDE

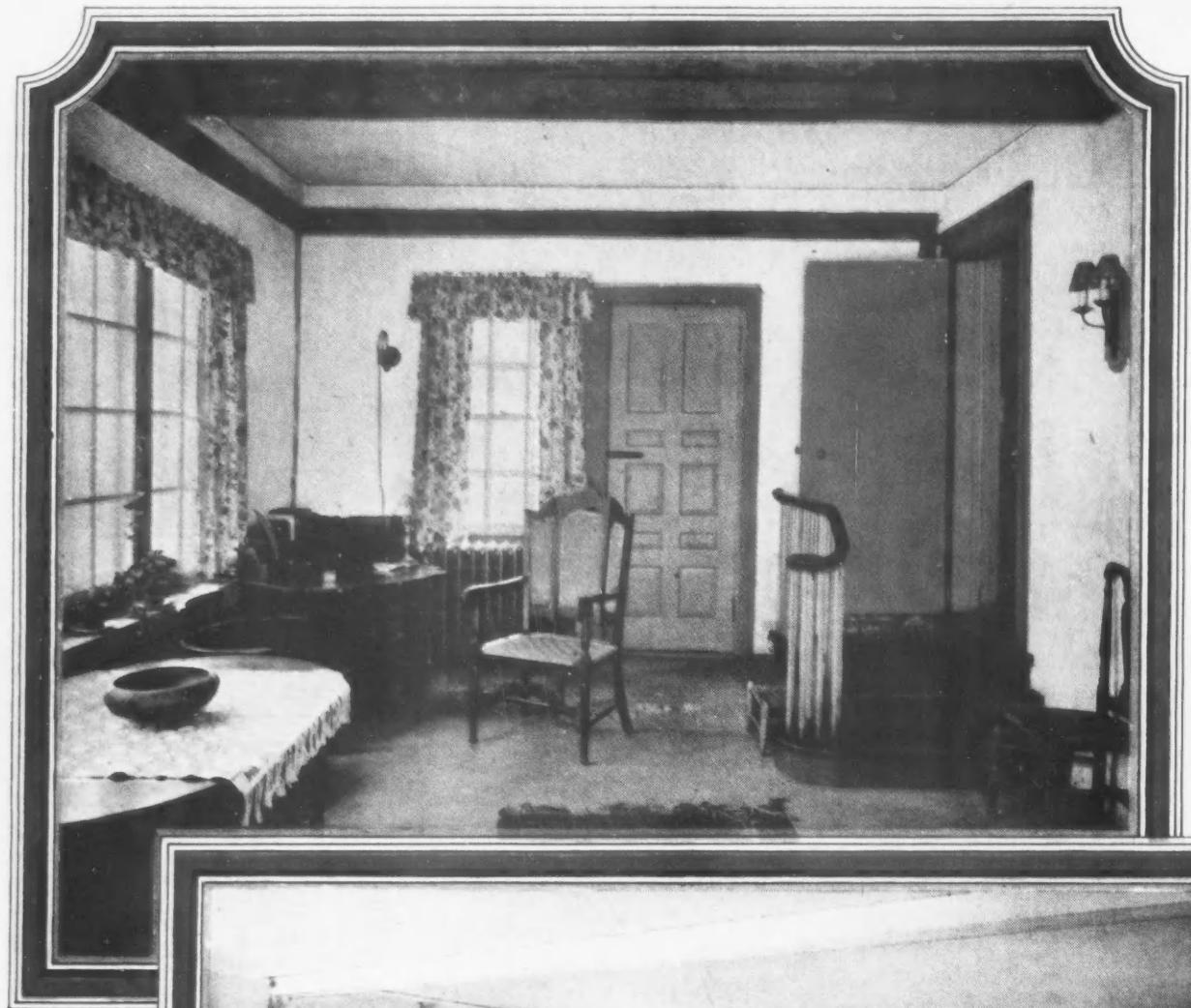
HERE is a beautiful Spanish home with six rooms and two baths. The width across the front is only 28 feet though if the building site permits, the garage gateway and the arched passageway to the left can be added, greatly increasing the width and impressiveness of this design. The floor plan is very clever. Color sketch to left shows how the bathrooms are finished in opal glass tiling to the top of the doors.



The RADCLIFFE

HERE is a Colonial home that is different—made so by the unusual gabled dormer. This house has six rooms and two baths, besides the big sun porch opening from the dining room. An abundance of closet space is provided both upstairs and down. Color sketch to right shows the sun porch as viewed from the dining room.

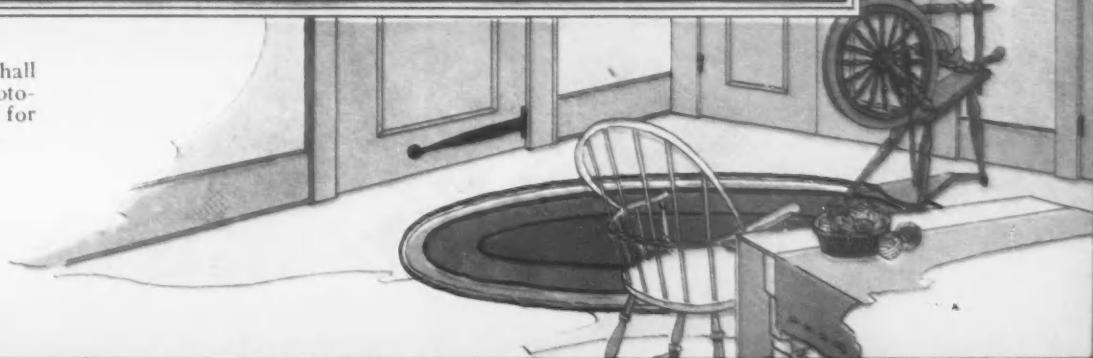


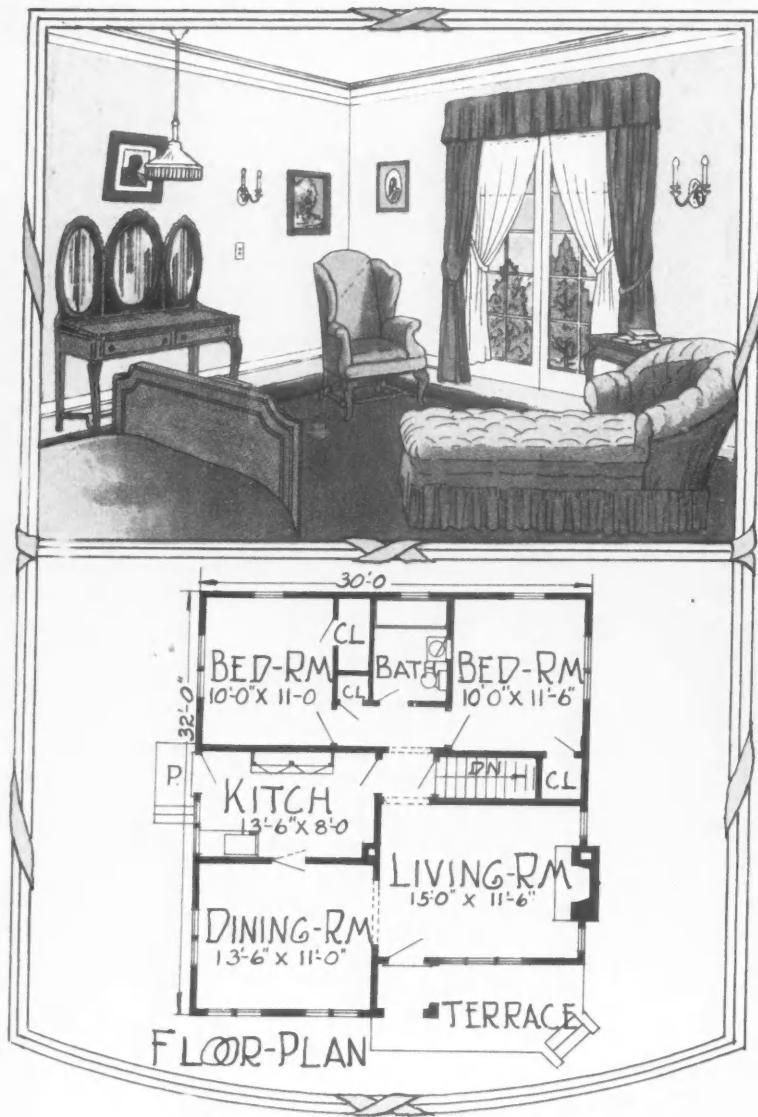


TWO old-time Colonial interiors—
above, a dining room with a
quaint stair landing; below, a bed-
room with canopy bed.



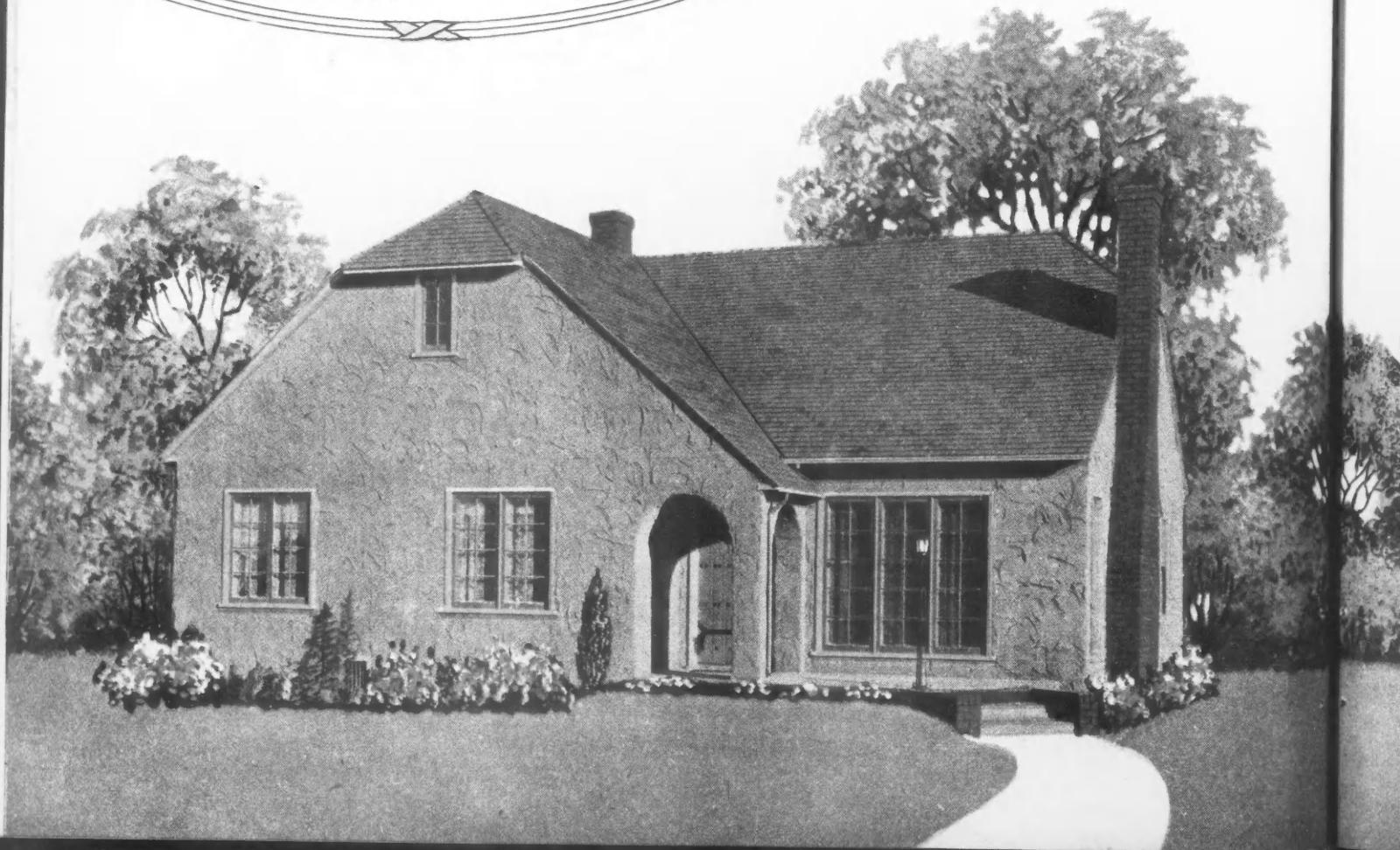
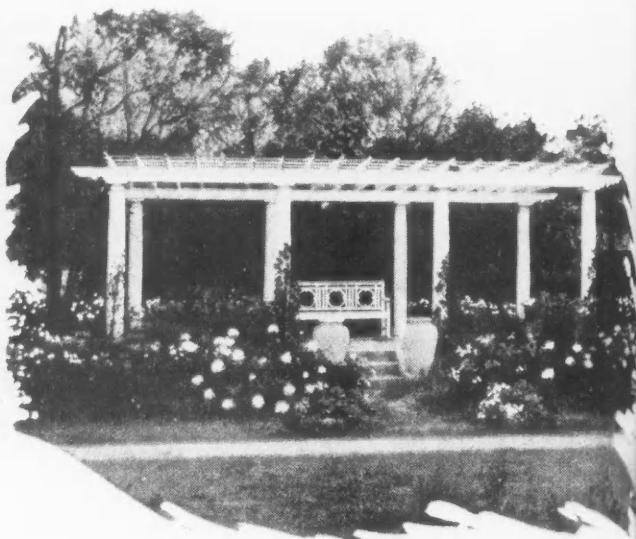
COLONIAL style in entrance hall and living room. These photographs are rich in suggestions for Colonial finish and furnishings.





The ROCHESTER

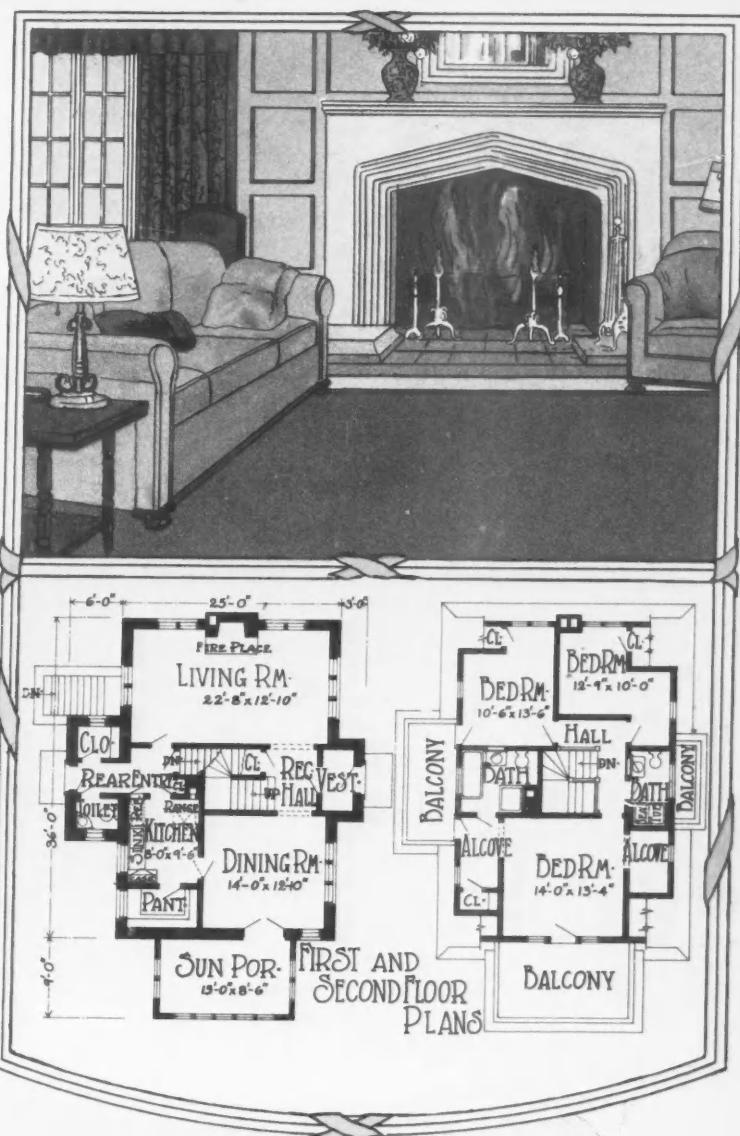
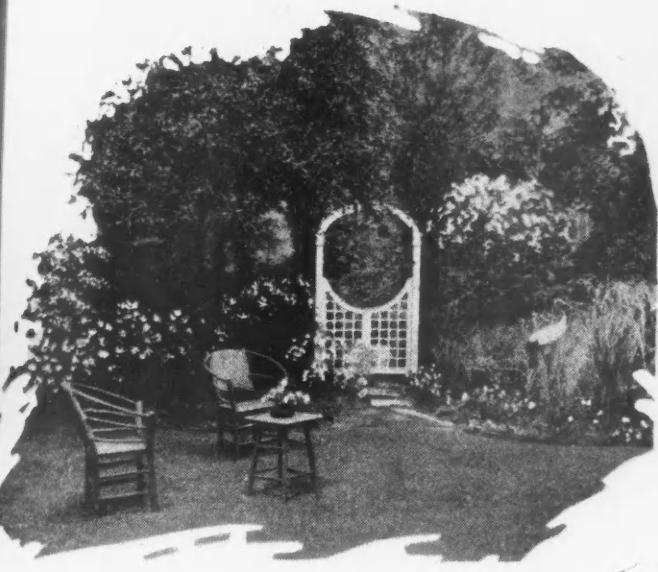
A FRENCH cottage in rough troweled stucco 30 by 32 feet, containing five rooms and bath. The exterior is delightful in its simplicity and the charm of good designing is carried right inside to the straightforward, comfortable interior. Color sketch to left shows furnishings for one of the bedrooms.

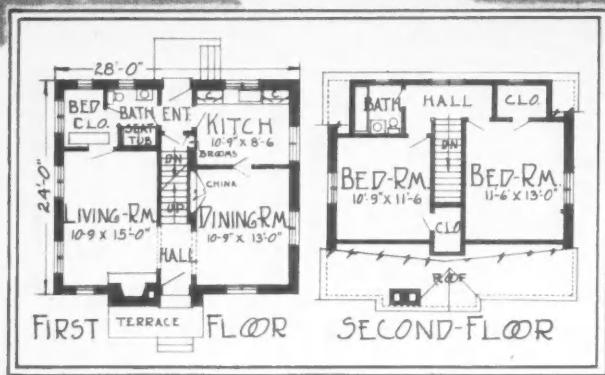
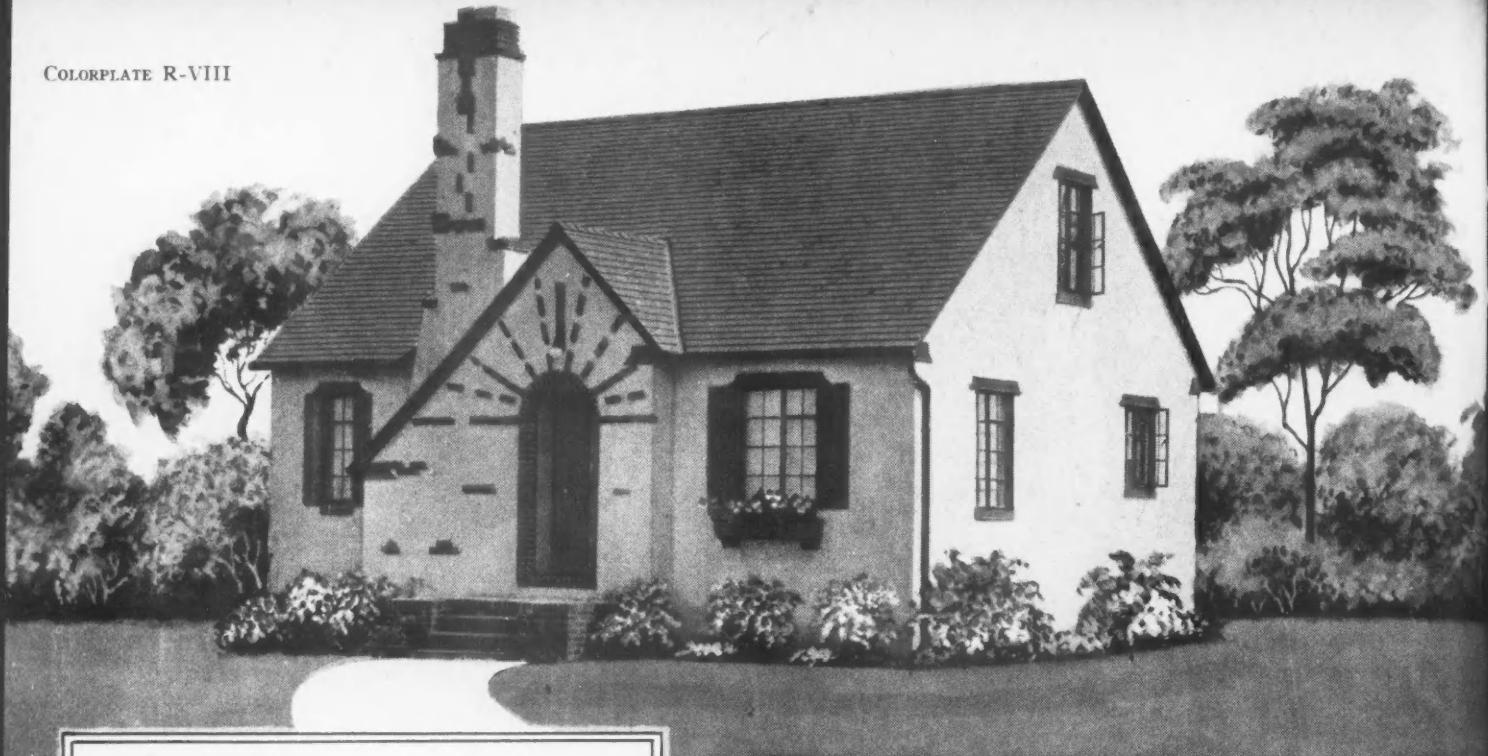


The RAVENNA

30 by
the ex-
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A WELL constructed Dutch Colonial home of stucco on tile with exposed ornamental brick work for the first story, and wide siding and a colorful roof above. The floor plan, as illustrated, is very interesting with central stair hall, living room, dining room, sun porch and kitchen downstairs and three large bedrooms and two baths upstairs. The front bedroom with double alcoves and doors opening onto two balconies is especially attractive. Color sketch to right shows fireplace treatment and furnishings for the big living room.





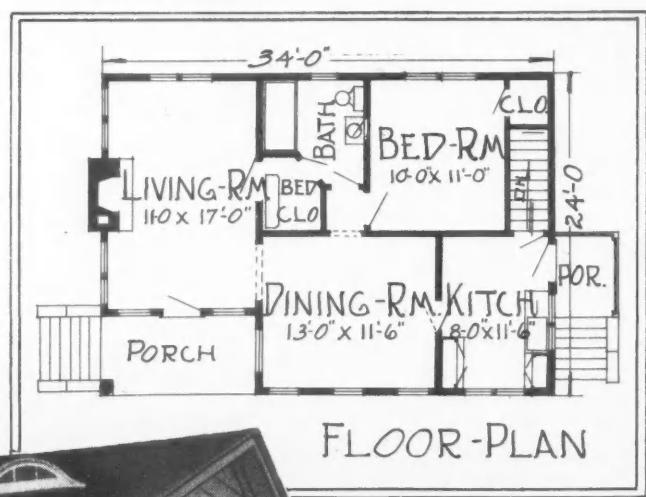
(Above)

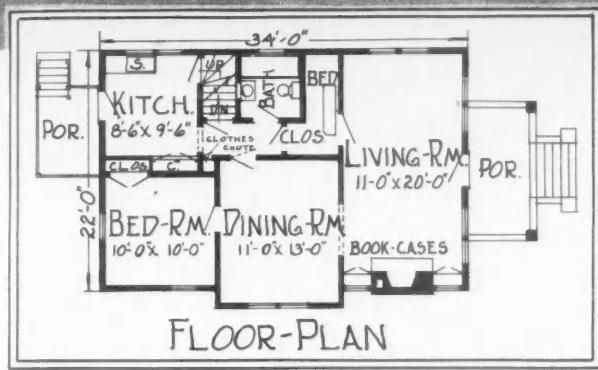
The REYNOLDS

PERSPECTIVE view and floor plan directly above show this charming little five-room cottage. Size 24 by 28 feet. The closet bed and bathroom on the first floor, opening from the living room, give this design six-room efficiency.

**The REVERE**

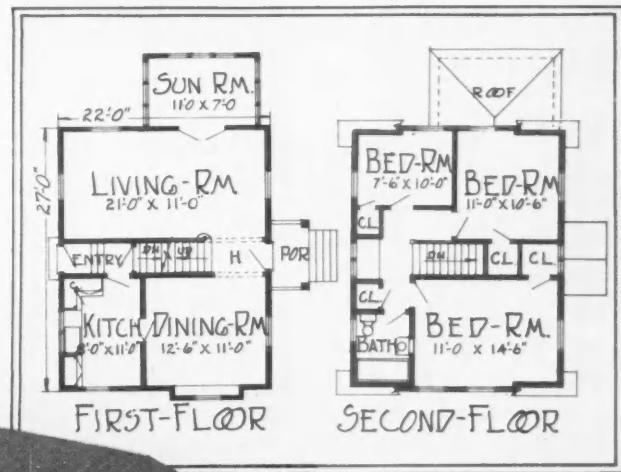
BELOW is illustrated a charming little Colonial cottage of four rooms but with five-room efficiency. The space-saving bed swings out of its closet and into the living room when occasion requires.





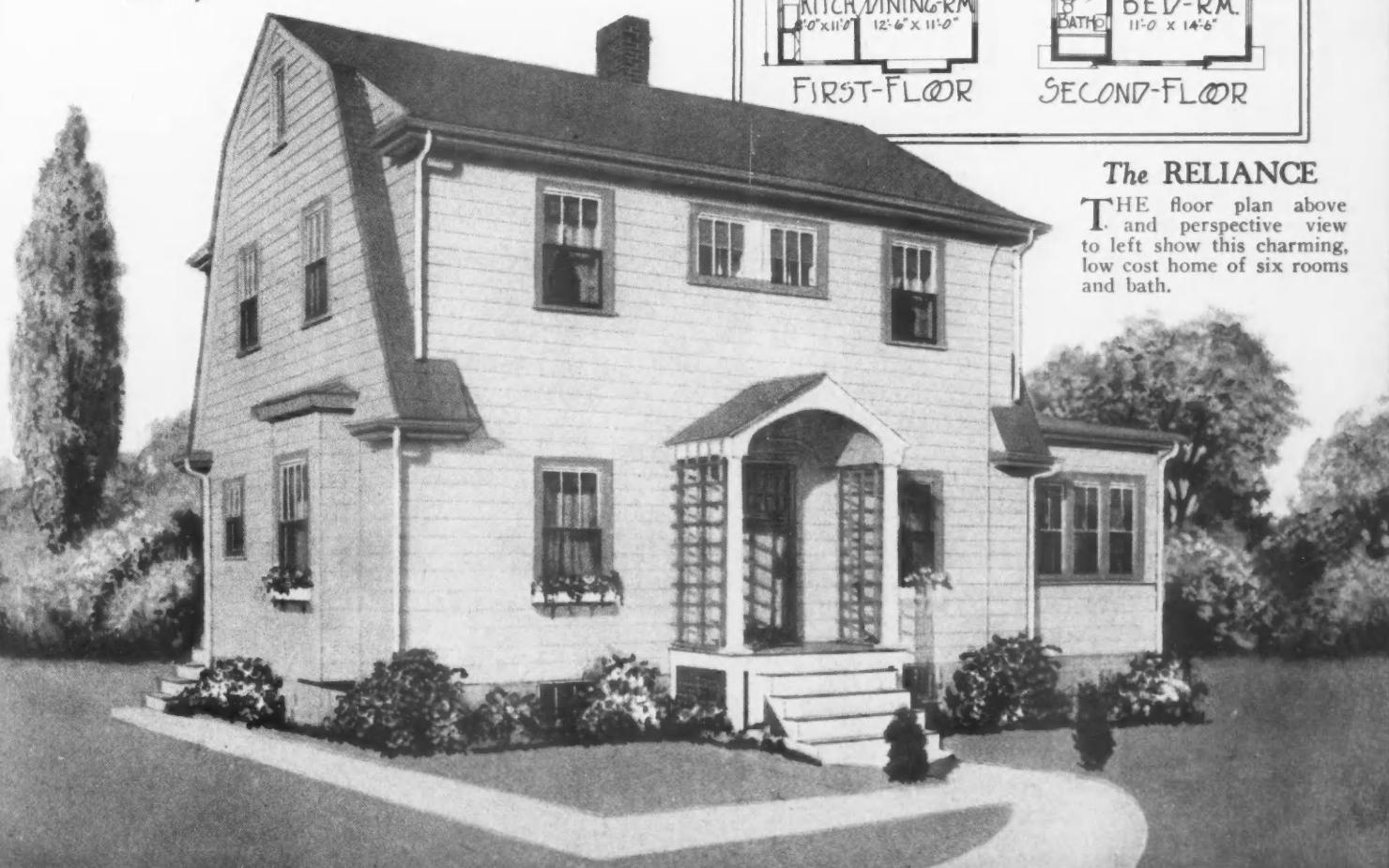
The REPUBLIC

ABOVE is a popular narrow lot cottage of four rooms but five-room efficiency.



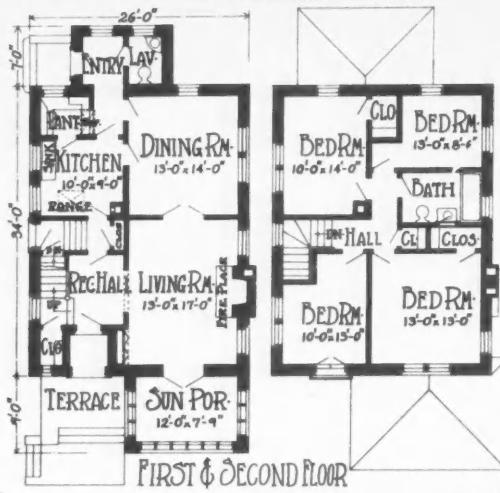
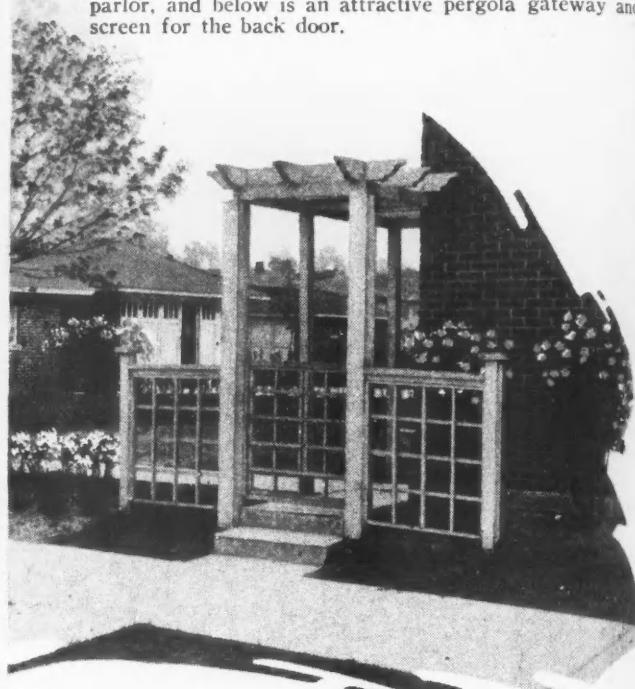
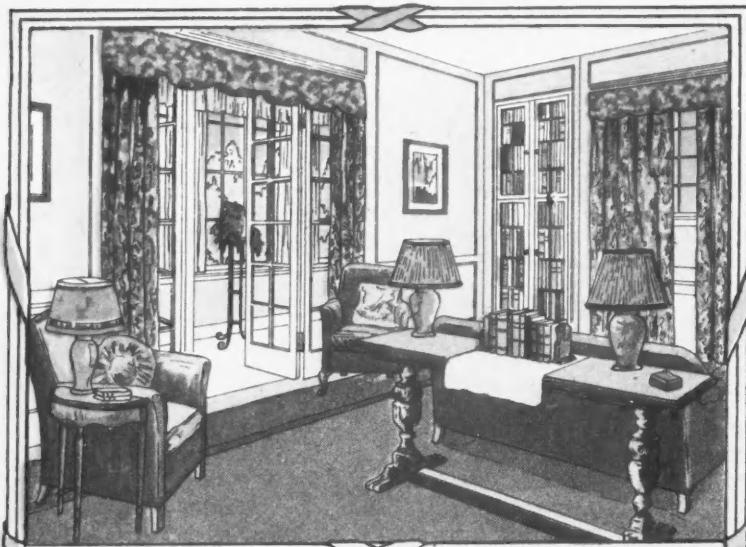
The RELIANCE

THE floor plan above and perspective view to left show this charming, low cost home of six rooms and bath.



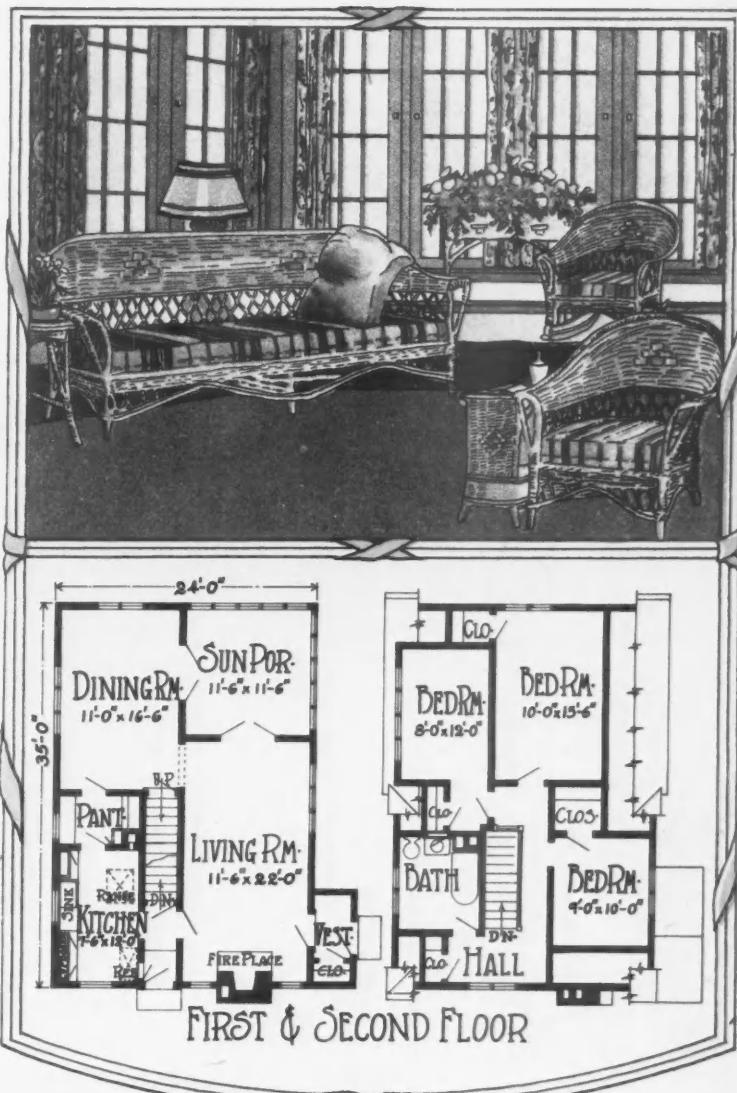
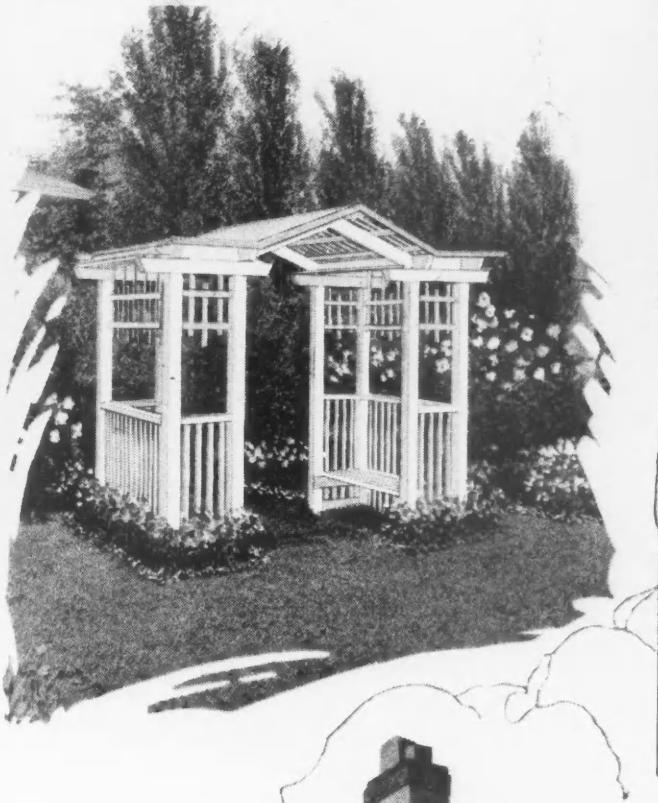
The RICHFIELD

HERE is a substantial brick residence of the square hip-roof type, 26 feet wide by 34 feet deep. Within these main lines of the house are contained the seven rooms and then there are projections front and rear on the first floor to accommodate the sun porch and the rear entry. Color sketch to left gives a glimpse of the living room looking through toward the sun parlor, and below is an attractive pergola gateway and screen for the back door.



The ROSEMONT

A VERY interesting design for a corner lot. The living room and the kitchen are in the same end of the plan and this rather unusual placing works out very satisfactorily. The dining room and the big sun porch have the other end of the rectangle, and upstairs there are three big bedrooms and a large bathroom besides plenty of closets. Color sketch to right shows the sun porch provided with wicker furniture and summery curtains at the casement windows.





**A Rose Trellis Frame for the
Living Room Windows**

Here is a clever scheme that can
be easily carried out and made a
beautiful feature for the garden
side of any home.

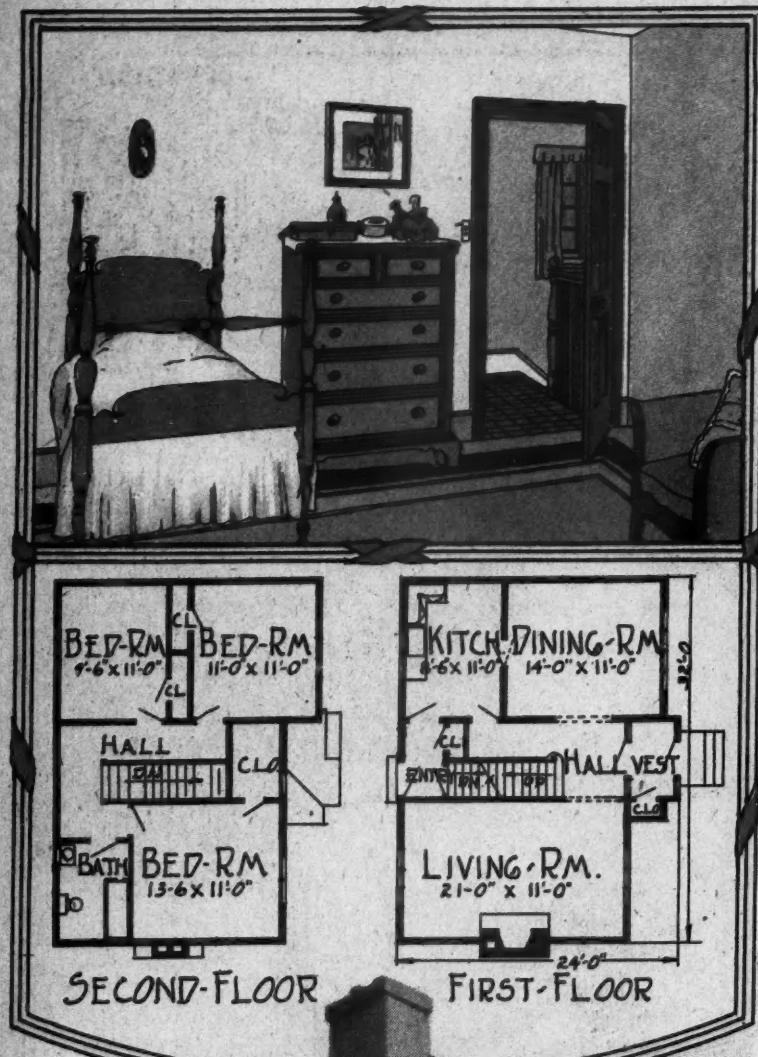




Front Lawns and Shrubbery

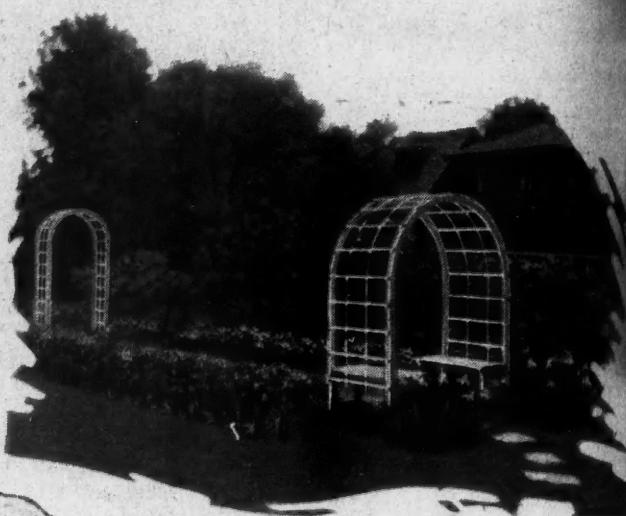
Put the house well back from the street and develop the approach with green grass and growing plants and whether the home is large or small the effect is delightful and inviting.





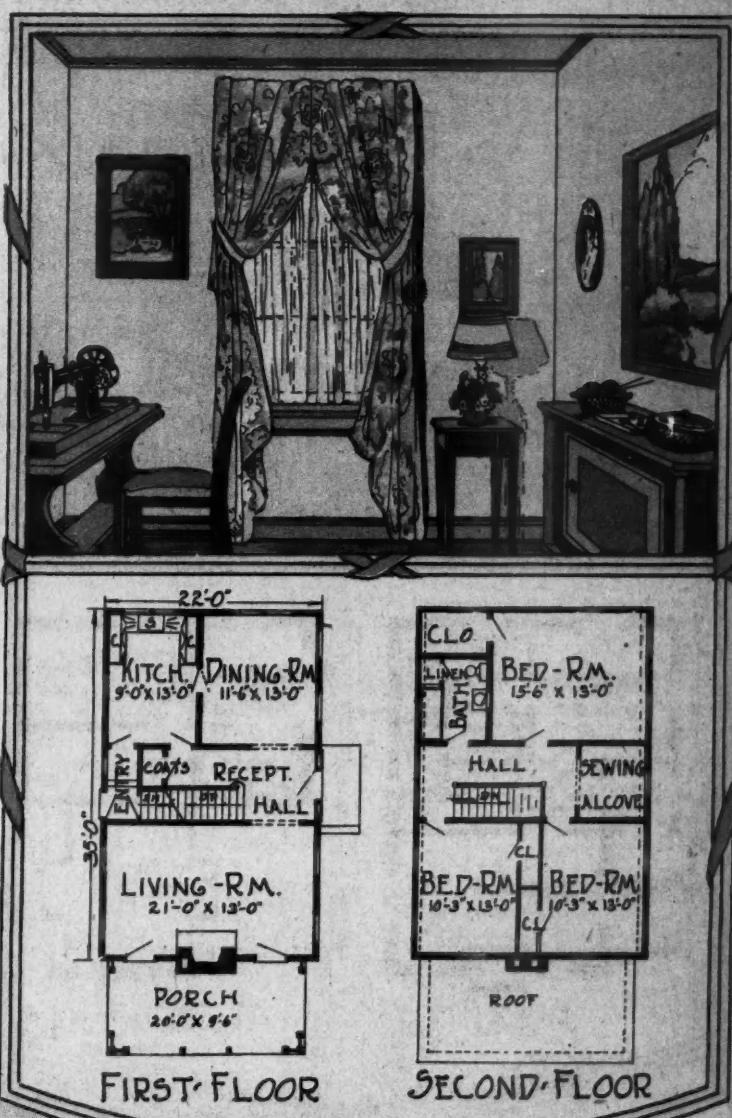
The REGENT

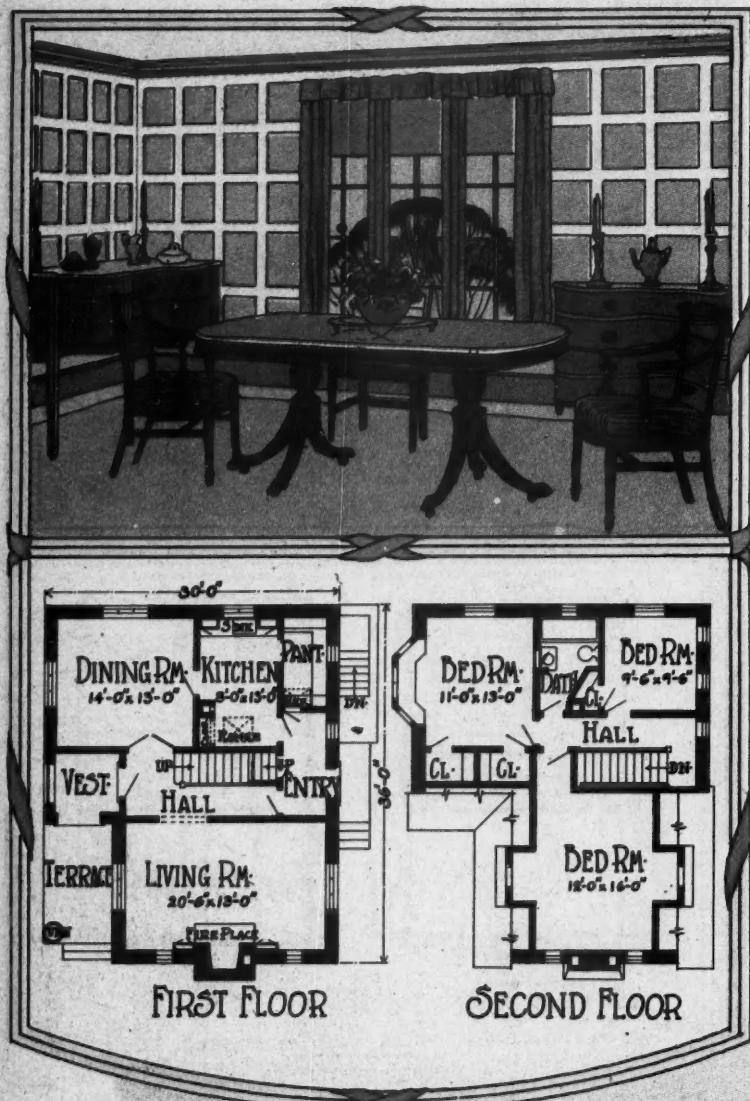
HERE is a typical English design in stucco, containing six rooms and bath. Size on the ground 24 by 32 feet. The floor plan, as illustrated, shows the very ideal arrangement and the color sketch to left gives an idea for furnishing the front bedroom in old Colonial style.



The RALEIGH

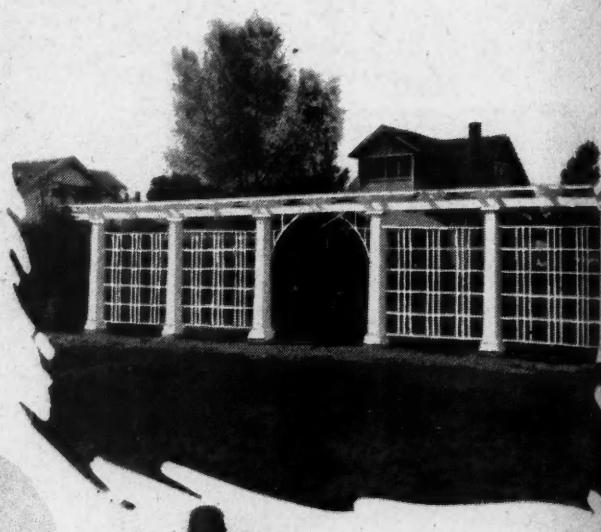
HERE is a perfect example of the straight gable Colonial, green shutters and all. Notice the overhanging of the second story—a favorite device of our colonial forefathers. This is an economical, narrow design. Size 22 feet wide by 35 feet deep. Six well arranged rooms are provided. Color sketch to right shows the handy sewing alcove, a part of the upper hall.





The ROCKFORD

ROUGH brick work full of character, combined with stone and stucco, set the style for this design. The oriel window and the other casement windows add to the English effect. The floor plan reveals six very well arranged rooms. Color sketch to left shows the paneled dining room.



OUR FRONT COVER HOME



Typical of California and Possessed of Distinction and Charm Our Front Cover Home Comes to Us from the Far Pacific Coast

ON the California estate of Mrs. Thomas Ince there is a charming residence which is typical of the style of homes which have won such favor of late years upon our Pacific Coast. The architect for this house was Roy Seldon Price and he has produced a design which can well be copied by the would-be home owner who admires the Spanish Mission theme in house design.

In the photograph below, as well as in the color illustration on our front cover, this residence is shown and, viewing it, our attention is instantly arrested by the many interesting touches which give it an individuality and charm that are unforgettable. The long glass doors of the living room, the beautiful tile roof, the walled balconies, wrought iron about the windows, the projecting beam with its fascinating lantern over the entrance and the bell set

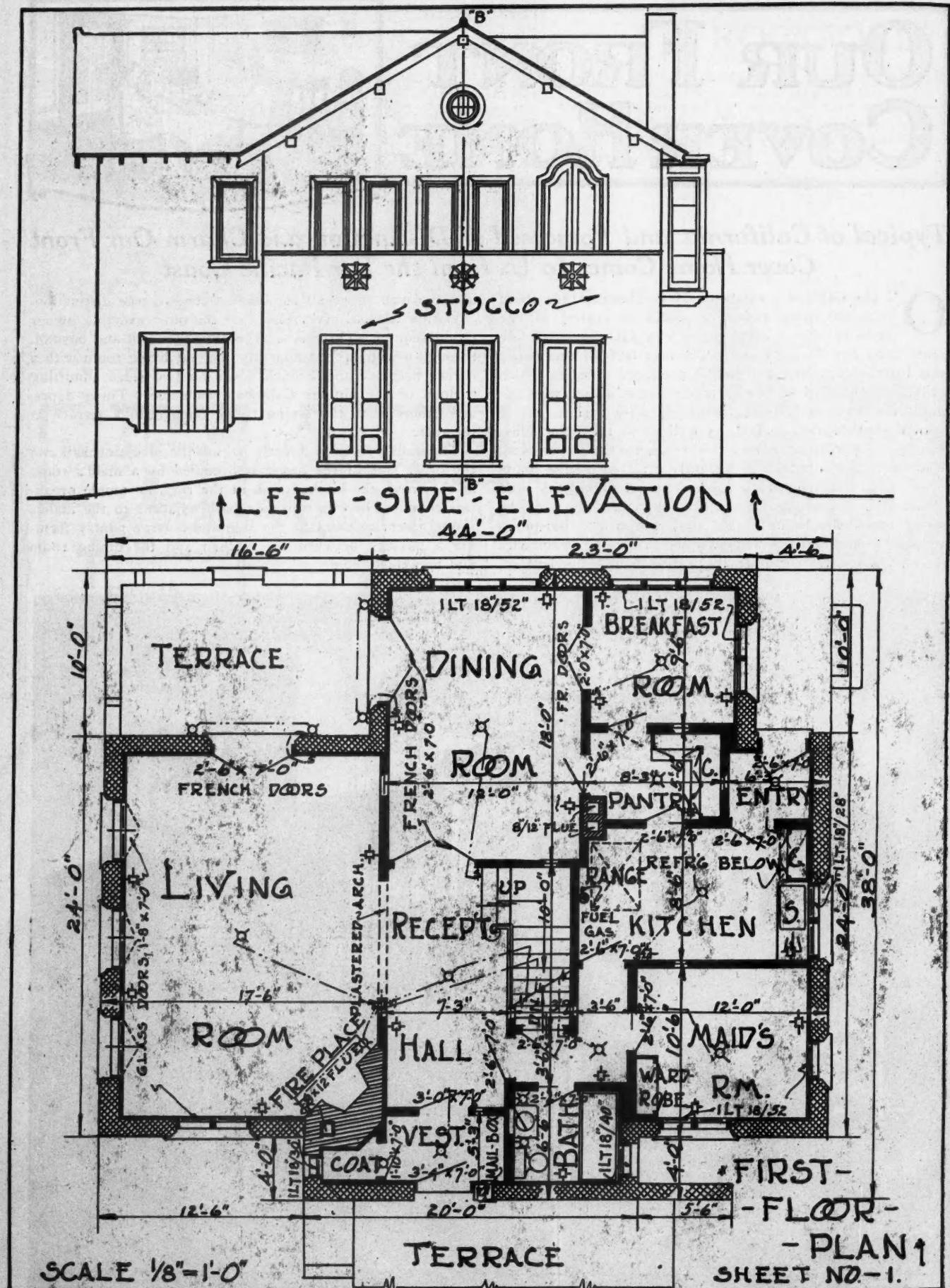
into the wall above all combine to achieve true distinction.

Within we find everything that the most exacting owner might require. There is a large reception hall and beyond, through a wide arched doorway, a great living room with a corner fireplace and French doors on two sides admitting a flood of the famous California sunshine. These doors, and others from the dining room, open onto a terrace at the rear.

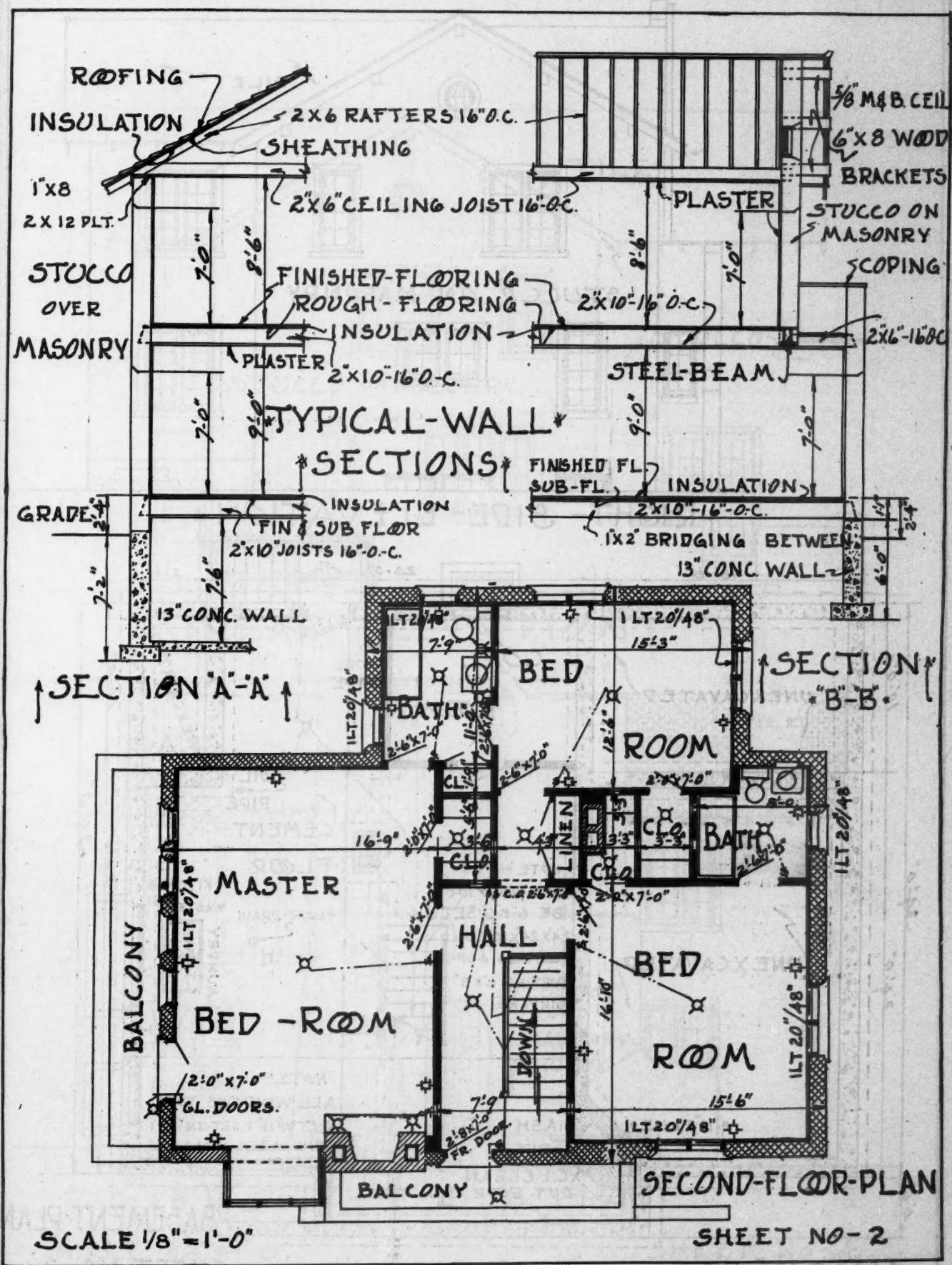
The dining room is directly behind the reception hall and the other side of the house is occupied by a maid's room at the front, the kitchen and, at the rear, an ample breakfast room. There is a private bath adjacent to the maid's room, a service entry at the side and a large pantry forming a passage between the kitchen and the dining room and breakfast room.



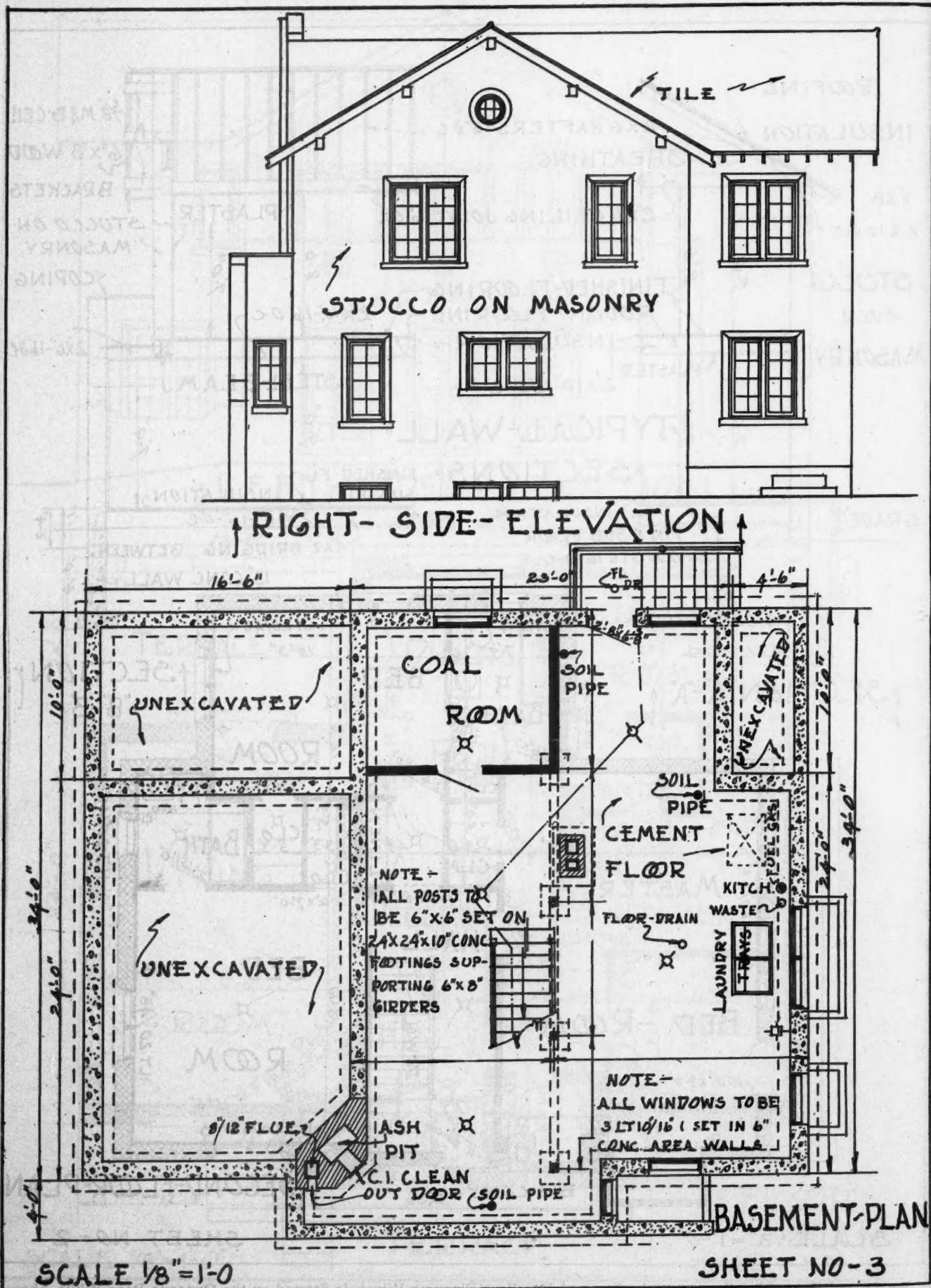
Substantial, Individual, Distinctive, These Are the Adjectives Which Instantly Come to Mind When We view the Residence Which Has Been Taken for Our Front Cover Home and We are Eager to See What the Plans on the Following Pages May Tell Us of the Interior.



Here Is a Floor Plan Which Shows How Every Detail of Our Front Cover Home Has Been Given Most Careful Attention Even to the Tiny Window in the Coat Closet, the Built-In Mail Box and the Complete Provision for Lighting and Convenience Outlets.

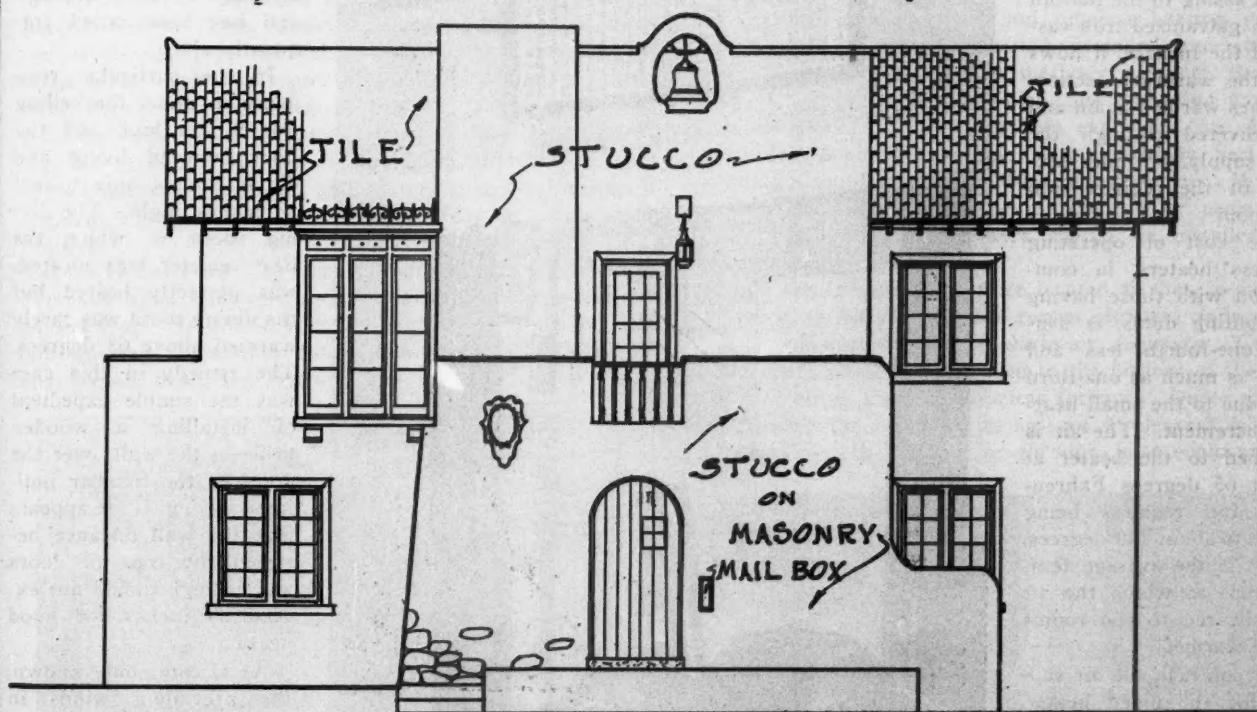
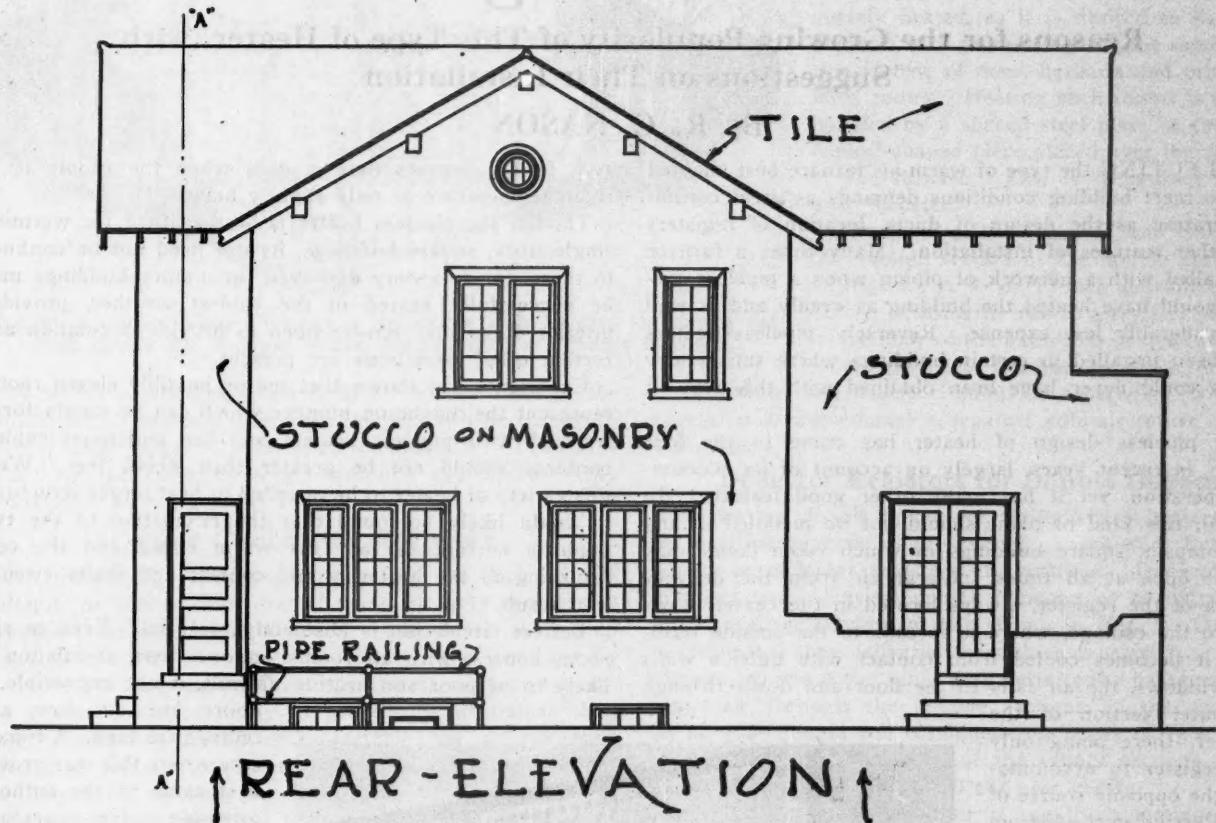


The Second Floor Plan Carries on the Story of Excellent Planning Which Is Started on the Opposite Page While Above It Are Shown Details of Construction and on the Pages Which Follow Basement Plan and Elevations.



Only a Portion of the Basement Is Excavated as Little Room Is Required for Heating Equipment in the Mild California Climate but When Our Front Cover Home Is Built in Other Parts More Room Might Be Desired.

AMERICAN
HOME
DESIGN

SCALE $1/8" = 1'-0"$

SHEET NO-4.

Rear and Front Elevations Bring Out the Arrangement of Windows, the Entrance Detail, Balconies, Belfry and Chimney Design More Completely than They Are Shown in the Side Elevations Given on the Preceding Pages.

Pipeless Furnaces in Residence Heating

Reasons for the Growing Popularity of This Type of Heater, with Suggestions on Their Installation

By R. C. NASON

SELECTING the type of warm-air furnace best adapted to meet building conditions demands as great consideration as the design of ducts, location of registers and other features of installation. Many times a furnace is installed with a network of piping when a pipeless furnace would have heated the building as evenly and as well at considerably less expense. Reversely, pipeless heaters have been installed in certain buildings where satisfactory results could never have been obtained with this type of plant.

The pipeless design of heater has come to the fore rapidly in recent years, largely on account of its economical operation, yet it has many other good features. In general, this kind of plant should not be installed in any but compact, square buildings in which room doors may be left open at all times. Warm air from the delivery section of the register, always located in the center, flows first to the ceilings, where it spreads to the outside walls.

As it becomes cooled from contact with outside walls and windows, the air falls to the floor and down through the outer section of the register, there being only one register to accommodate the opposite course of air. Passing to the bottom of the galvanized iron casting of the furnace, it flows into the warm-air section, becomes warmed again and is delivered through the heat supply, or inner section, of the register into the room.

The cost of operating pipeless heaters, in comparison with those having distributing ducts, is usually one-fourth less and often as much as one-third less, due to the small heating increment. The air is supplied to the heater at about 65 degrees Fahrenheit, and requires being raised to about 140 degrees, which is the average temperature at which the air is delivered to the rooms to be warmed.

By contrast, the air supply for the piped heater, coming as it does from outdoors, enters at from 20 degrees below to 20 degrees above zero, depending upon the locality where the furnace is in use. Obviously, it requires more fuel to raise the temperature of the supply from

zero to 140 degrees than it does when the supply is at room temperature or only slightly below.

Though the pipeless heater is best adapted for warming single-story, square buildings, its use need not be confined to these, for two-story and even three-story buildings may be successfully heated in the coldest weather, provided interior doors may remain open to provide circulation and certain other conditions are present.

Experience has shown that ten or possibly eleven rooms represent the maximum number which can be satisfactorily warmed with pipeless heaters and the maximum cubical contents should not be greater than 40,000 feet. Were this variety of heater to be installed to heat larger structures it would likely be found that the circulation of the two opposite currents of air, the warm rising and the cold returning to the heater, would conflict and faulty circulation result.

Perfect circulation is absolutely essential. Even in six-room houses, with all rooms on one floor, circulation is likely to be poor and heating difficult, if not impossible, if doors are cut low and ceilings are high. A typical case where this was proven first came to the author's attention a few years ago and has been noted frequently since.

In the particular residence in mind, the ceiling was 9 feet high and the door between living and dining rooms only 6 feet 10 inches high. The living room, in which the heat register was located, was perfectly heated but the dining room was rarely warmed above 63 degrees. The remedy in this case was the simple expedient of installing a wooden grille in the wall, over the door, in the manner indicated in Fig. 1. It appears that the wall distance between the tops of doors and ceilings should not exceed 30 inches for good heating.

As is commonly known, the prevailing winds in winter are north and west. When two-story buildings are to be heated with pipeless heaters the stairways are the natural paths of air flow. It is for these reasons that heaters should best be located to the north or west of stairways. Were



Fig. 1. A Wooden Grille Set in the Walls Over the Doorway Permits the Passage of Heat Between Rooms.

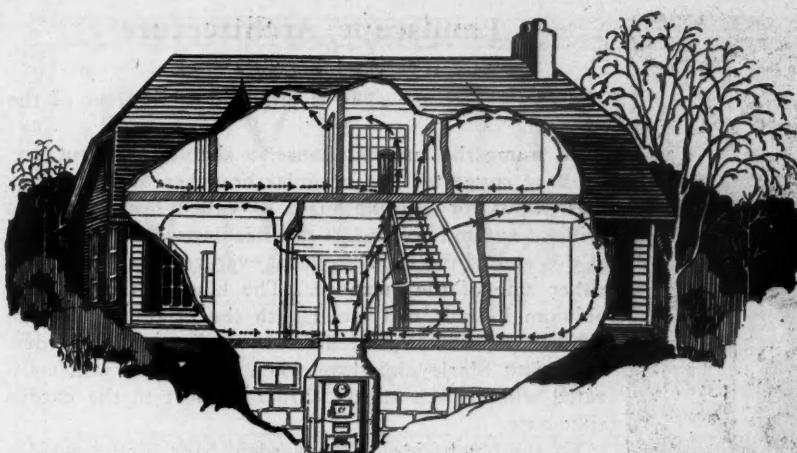


Fig. 2. Sectional View Through a Residence with Arrows Indicating the Path of the Air Current When Heated with a Pipeless Furnace.

they to be installed near southern or eastern sides of the buildings it is unlikely that sufficient heat will be carried to second floor rooms to make them comfortable. The paths taken by the currents of air within a typical two-story house may be observed in Fig. 2.

Ceiling Circulating Registers

An interesting condition to illustrate the lack of circulation to second floor rooms came up only recently in a certain town in New England. The heater had been installed towards the southern side of the building by someone evidently unfamiliar with pipeless work and sleeping rooms remained chilly at practically all times. Not only were these rooms uncomfortable but an excessive volume of cold air was forced down the stairway to render the first floor, as well, poorly heated.

Two remedies suggested themselves: first, that of moving the heater. This, however, appeared impracticable, as the arrangement of the cellar would compel placing the plant so far from the center of the building that it would have been even less effective than it was at the time. Another remedy, and a cheaper one, was cutting an opening in the ceiling of the dining room, almost over that room's warm-air register, and installing a steel grille of the type shown in Fig. 3. This is known as a circulating register.

It so chanced that the second floor hallway was directly over the spot selected for the register, hence warm air passed from the dining room through the ceiling register and warmed the second floor satisfactorily. The cool air then passed down the stairway and into the cold air sec-

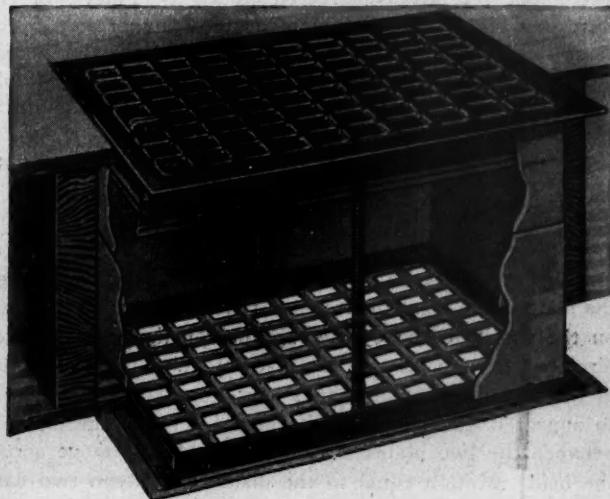


Fig. 3. This Illustrates the Method of Installing Ceiling Circulator Registers.

tion of the main, or first floor register and to the heater for rewarming. Circulating registers 14 by 20 inches or greater are recommended.

When pipeless heaters are installed, it is not infrequent that bathrooms are inadequately heated, as it is desired to keep the doors of such rooms closed. The same situation is true of dens, herbaria and other isolated rooms. Heating such rooms is usually handled by a special steel plate or cast-iron, conical-shaped piece placed over the radiator of the furnace. This is sometimes known as a "booster."

The snout of the "booster" cap extends to the outside section of the double casing, as in Fig. 4. A 9- or 10-inch galvanized iron duct is customarily run to a register installed in the floor of the bathroom or den. A small louvre placed in the bottom of the doors of these rooms will assist circulation, otherwise (with the exception of bathrooms) a separate cold-air return duct is advisable.

Deflector Registers for Double Houses

In heating double houses or those where heaters must be installed beneath room partitions in one-story buildings, double or deflector registers are required. Deflectors are provided with identical duplex registers or an extra large single register similar to that shown in Fig. 5. One-half of the heat is then delivered through each register, or half a register, which at the same time permits the passage of the return-air through the outside sections of the registers. In no case should the combined free areas of return sections be less than the area of the supply sections, and it should preferably be 10 to 20 per cent greater.

Recirculation of interior air is rapidly becoming standard practice in both piped and pipeless heating systems because of the effective heating provided and economy in fuel consumption. In both methods, however, there are likely to be certain rooms which, due to having bay windows, fireplaces or large northern exposures, are difficult to warm. Such rooms may be satisfactorily heated by installing a supplementary cold-air return register. Whereas warm-air registers should be installed in or near inside walls, cold-air return registers should be installed near exposed walls.

When return-air registers are located at these points the cooler air, by passing out the return registers, induces circulation of heat from the warm-air registers. Cold-air return ducts should be extended to the bottom of the outer casing of either piped or pipeless furnaces. Ducts may be run through the cellar at an angle of 45 degrees, or horizontally along the ceiling, or through joist enclosures, to



Fig. 5. For Heating Two Family Houses, the Divided or Deflector Register Is Required.



Fig. 4. A Phantom View of a Pipeless Furnace Showing the Booster Cap Fastened to the Top of the Radiator.

a point near the furnace, when they should be dropped to the bottom of the casing at 45-degree angle.

When pipeless heaters are used, it is seldom advisable to install more than one or two return-registers. The number may be greater in piped installations but they would best be limited so far as is possible, as the increased circulation adds to the demand on the heater and, unless this has been installed exceptionally large, may cause damage due to forcing the fire.

Whereas with piped furnaces practically any and all types of buildings may be satisfactorily heated, provided there is sufficient space for the ducts, the pipeless type of heater is not adapted to all classes of construction. It is inadvisable, for example, to attempt to heat combination store and residence buildings with pipeless heaters, due to the necessity of keeping doors between the two divisions closed.

In general, avoid the installation of pipeless heaters for houses where several rooms must be shut off, those more than 40 feet long, two-family houses, rambling structures, or those with wings, school houses and public halls, where ventilation is usually required. Where it is suitable, however, this type of furnace is an efficient and economical plant due to its freedom from dust and fire hazard, absence of numerous registers to be constantly regulated, its quick-heating ability and economy in first cost and operation.

Landscape Architecture

(Continued from page 159.)

The gateway to the alley is provided at the rear of the garage.

To frame the summer house, a simple low structure, we have suggested the irregular branches of the euonymus alatus, or burning-bush, so called because of its brilliant autumn colors. If color is desired in the winter at this end of the lot, set out an evergreen arbor vitae at either side of the entrance. The blue of the tall delphinium hybrids will blend with the brighter colors of the hardy phlox toward the corner of our little garden. The giant Shirley foxglove when staked and well cultivated will make a sturdy corner support to the garden silhouette.

To the north side of the garden, back of the wooden seat, let us set out the bleeding-heart, with its drooping blood-red flowers, and the lilies of olden days will partially cover the vines on the lattice. The green of the bleeding-heart branches will relieve the otherwise unsightly stems of the lilies when they are through blooming.

On the south side of the garden behind a twin seat to the one at the north, the false indigo or baptisia, with its dark blue, pea-shaped flowers make a splendid color combination with the day-lily next to the garden lattice. For continuous bloom throughout the summer months every garden should include the tick-seed or coreopsis. Its yellow eye is especially attractive for table decoration. The tall, long-spurred columbine also makes a delicate centerpiece for the breakfast table. Gaillardia, like the tick-seed, is a long-flowering favorite among the perennials, and hence is given a prominent place.

At the entrance there is reserved a place of honor for the peony, the Felix crousse, with its bomb-shaped, brilliant red blooms, and the rose-type festiva maxima in a paper white with rose markings, planted at either side of the walks about the pool.

For color effects near the water there is nothing more satisfying than the Siberian and Kaempreri iris. The latter, the imperial Japanese iris is most effective when planted in large groups. The ground should be kept well stirred and, while during the growing season the iris need moisture, they do not need large quantities. Too much water is as fatal to their blooms as too little.



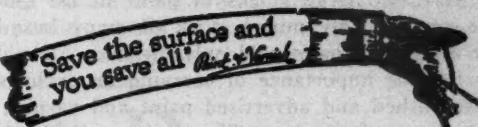
Device to Measure Wall Deflection

THE amount of deflection of a brick wall 40 inches thick under the pressure of one finger can be measured by an instrument recently constructed by C. G. Peters, of the Bureau of Standards, Department of Commerce. If one looks into the eyepiece while some one else walks across the floor the deflection is apparently so great that one would suppose the whole building to be swaying back and forth as though made of cardboard.

The instrument makes use of the interference of light waves, and is very simple in construction. A glass plate is fastened to the wall of the building. Another plate is mounted close to this first plate in the tube of the instrument. Part of the light from a helium tube passes through the plate in the instrument and is reflected back by the plate on the wall into the eyepiece. The remainder is reflected directly from the plate in the instrument. The interference of these two sets of light rays causes light and dark bands to appear in the field of the eyepiece. When the distance between the two plates is changed the bands move across the field. Motion equal to the distance between two dark bands represents a deflection of about one one-hundred-thousandth of an inch.

SAVE THE SURFACE DEPARTMENT

Written, Illustrated and Edited by the Headquarters
Staff, SAVE THE SURFACE CAMPAIGN



Service Pays

THE average man knows less about building materials than he does about the workings of his car. He is entirely dependent upon the advice of his builder and the building supply dealer, who, in turn, may make or mar the home for which the man has worked and saved. This situation is one of the most telling arguments in favor of a retail department in all building supply stores. With all the material on hand the dealer or builder can show the home owner what is necessary for his particular needs and sell it to him forthwith. He can also pave the way for the future sale of upkeep materials.

Consider paint and varnish. They are essential to the

home, both from the standpoint of appearance and permanence. Every house that is built is a potential market for paint and varnish, yet few new home builders realize this. They are apt to try to skimp on paint to save on the initial cost, not realizing that unless adequate paint is used, the new house will soon look sleazy, will be exposed to weathering and decay, and last, but certainly not least, will lose in loan or sale value. Probably no other article offers so large an opportunity for genuine service and substantial profits as a retail paint department in a building supply store.

One of the many organizations that has benefited in



A Sturdy New House Represents the Honest Workmanship of the Builder Plus the Honest Service of the Dealer. A well built house is a monument to these two men.

this way is the Dierks Lumber Company of De Queen, Ark. A few years ago the Dierks company was strictly a lumber concern, but a realization of the advantages of running a retail department in conjunction prompted the establishing of a true customer's service. Paint and varnish were the first materials stocked.

There were two large stocks of paint in De Queen at that time, one a badly mixed stock of many brands and the other a stock of paint sold only on price. The Dierks company felt the importance of carrying an exclusive line of well-established and advertised paint and varnish to be sold on quality and prestige. The wisdom of this observation has evidenced itself in the percentage of profit on sales that the Dierks company has enjoyed ever since.

The policy of helping the customer as much as possible to obtain the most appropriate materials for his needs has worked well in this department. Paint is so important an item that it must be well constructed in order to meet the demands placed upon it. It must also be adapted to its use.

A customer may buy cheap or inappropriate paint once, but he will not repeat his mistake. The store in which the unsatisfactory paint was purchased is held responsible for the customer's ultimate loss. The dealer must steer his customers in the right direction—a process that requires knowledge, tact, and effort, but which pays in the end with satisfied customers who continue to patronize the shop and who recommend others to it.

Nearly all paint and varnish manufacturers have service bureaus and promotion departments to which questions may be referred. The Dierks company early established the

policy of securing as much information as possible about the various paint products. For example, should a customer want to know something about the paint requirements for his house, new decorative techniques, color schemes, or special paints, the information is secured direct from the manufacturer.

Well assorted stock is another item that influences profits. The Dierks company carries little stock in reserve, since it always plans to have a shipment in transit. The freshness of the stock and its availability has been influential in building up a business with contractors and even to securing the co-operation of painters themselves.

De Queen is a small town of some 3,200 people, but the experience of the Dierks company proves that there is always a market for paint and varnish wherever there are homes. The necessity for service in this department cannot be overemphasized, for while paint and varnish are considered common materials, it is amazing how few people realize the importance of using enough paint of the right kind in the right place. People appreciate sound advice on these matters because it convinces them that the dealer feels an interest that far excels that of merely making a sale and cashing in on the profits.

It is noteworthy that the Dierks company says that the class of material for special decorative schemes carries a larger margin of profit than do the regular staple items sold to the contractor. This condition makes a paint department a real money maker; the dependence of the customer upon the dealer's knowledge and service makes it a customer keeper.

Finishes for Woodwork

THE painting contract is one of the most important contracts which the builder lets. He must depend largely upon paint and varnish, not only for the beautification of his houses, but also for the very life of the house itself. For paint and varnish are the sole protection of his struc-



Varnish Enhances the Natural Beauty of Grained Wood. This stairway is in the home of William Farnum, the well-known actor, at Hollywood, California.



Varnish and Stain Bring Out the Beautiful Striped Ribbon Effect of the Red Gum Used in Panelling This Room.

tural materials. He should, therefore, have more than a passing acquaintance with the principles of interior decoration. Just as there are many types of structural materials, so there are many different types of paints and varnishes, each of which is meant for a specific purpose.

A great interior decorator recently made the statement that he considered the character of the surface about to be decorated of far more importance than the quality of the paint or varnish used. In other words, almost any ordinary paint or varnish will hold on a surface properly prepared for that particular product, while the best product will not "stick" to a poorly prepared surface.

Primers and fillers are the principal surface preparers. They must vary to suit the type of wood to which they are to be applied. There are some twenty-odd varieties of wood in common use today. It is absurd to suppose that any single paint, varnish or primer could satisfy so many different requirements. It would be just as rational to suppose that one hat could fit all heads.

The various classes of wood have individual types of grain, which makes them more or less porous. The priming

coat for soft, porous wood should contain an excess of linseed oil to satisfy the absorbent properties of such wood. This excess of oil prevents the absorption by the wood of too much of the liquid in the unthinned paint. Sufficient of this liquid must remain to bind and hold the pigment to the surface.

On the contrary, the priming coat for hard, close-grained wood should contain an excess of turpentine to assist in carrying the coating into the pores of the wood.

Building Up a Paint Department

NO single building material is an isolated substance. Because of its function it necessarily involves other and related materials. Lumber, for instance, is sold to build houses. It is closely allied with the paints and varnishes that protect and preserve them. For that reason lumber companies and building supply dealers all over the country have come to realize the natural connection between such materials, and to extend their sales by extending their stock to include as many as possible of the related materials that go into building.

A house is built once, they figure, but if the owner values it at all, it is painted many times. If the paint for the initial and subsequent coats are sold by the company that handled the lumber or other building materials, a permanent contact is built up with the customer,—a contact that is more than valuable to the lumber company. At least, that is what one dealer discovered.

His headquarters are at Wildwood by the Sea in New Jersey, and for seventeen years he has been selling lumber to the fluctuating population of the Atlantic Coast resort. After some years' experience he realized the advantage of investing in a side-line stock of paint, and has expanded this side-line until for the past year his investment totaled \$8,000.

Now the T. S. Goslin Lumber Company is an established paint and varnish dealer at Wildwood and is making a very good thing of it. Although the problem of this organization was unique, its experience has enabled it to formulate a number of generalizations that anyone concerned with the business of buying or selling building materials should find valuable.

Since the residents of Wildwood are mostly vacationists, the Goslin Company stocked up with paint made by a manufacturer who gave the advantage of national advertising to his product. This insured a paint with which everyone in Wildwood, whether he came from California or Michigan, would be familiar. Then a capable salesman was put in charge of the paint department.

Much of the success of this company's adventure with paint is due to this step. A good salesman, who knows his line, is a valuable investment, for too often the selling of paint and varnish is a hit-or-miss affair, in which no one has sufficient responsibility or vision to develop. John T. Gilman, who handles the Goslin paint department, won first place and a trip to the world's series some time ago, in a national contest held by the manufacturers of the line of paint carried by the Goslin Company.

The principles of selling and service which have built up this particular paint department can be universally applied. In the first place, it is important to have a complete stock of fresh paint and to secure a reputation among



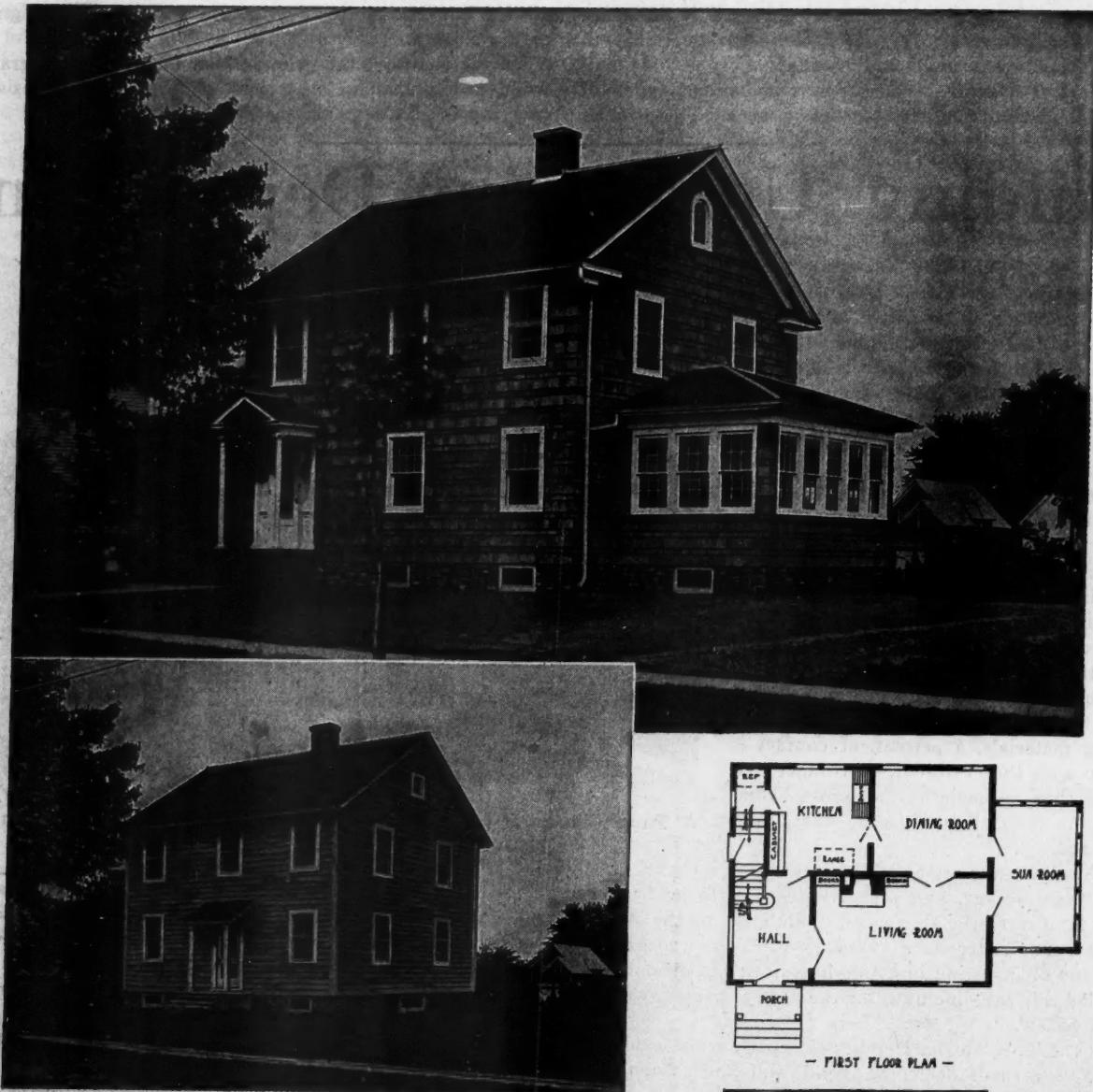
A Paint Consumer for Many Years. Every well kept house, no matter what its age, is a market for paint.

local painters for having it. Although this involves considerable checking and watching, the results are more than compensating. Another essential is to have a delivery force on the job; to get the desired material if it is not in stock and to deliver it as soon as possible, whether the order is for a small quart can of paint or for a barrel of it. This, the Goslin Company has found, establishes a permanent clientele, since painters like to deal with distributors who have what they want or will get it for them with the smallest possible delay.

Too often the paint department of a building supply company is made so inconspicuous that it is overlooked by customers. It should be visible from every angle of the store, if possible, and, at any rate, it should be displayed as attractively as possible. Occasional window displays and exhibits, if an opportunity presents itself, will do much toward attracting customers' attention and to put paint ideas into their heads, as well. The Goslin Company took advantage of the Wildwood boardwalk and showed a "Build and Own Your Own Home" exhibit there, where thousands of people would see it. Besides urging various features of construction, the exhibit played up the use of paint for interior decoration. In this way many people were acquainted with the possibilities contained in a can of paint.

Putting on such an exhibit is profitable, but it involves one of the essentials of successful paint selling,—knowing the paint game straight through. A competent sales force is able to tell a man just what sort of paint to use for the various parts of the house, what effects may be achieved with certain techniques and how the material should be handled. This does not mean that the sales force must be composed of super-paintmen, but of ordinarily intelligent individuals who avail themselves of the opportunities.

New Homes From Old Houses



A Transformation Effected by the Application of Stained Shingles Over Old Siding Is Shown in These "Before and After" Views of an Old House.

ANYONE can recall seeing old houses, perhaps of the box-like square type pictured on this page, which appeared wholly out of place among their newer and more attractive neighbors. There are many such houses throughout the country and often the owner dislikes to part with the old home even to obtain a more attractive and more comfortable modern one. This feeling may be in a large measure justified because these old houses are frequently of good sound construction and it is only in finish and minor details they fall below the present-day standard.

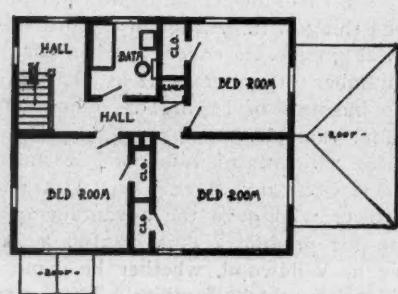
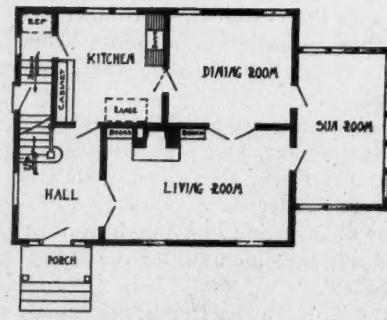
Remarkable transformations are being wrought in many of these houses simply by the application of stained shingles, the possible addition of a room or two, the modification of a roof line or the remodeling of an entrance, together with interior work incorporating the modern improvements.

A striking contrast in appearance is seen in the "before and after" views presented here. A cosy sun parlor added, the entrance moved to the left, making possible a large, well lighted living room, and a new all-over coat of shingles, including the roof has done the work. In this case the shingles were laid in wide courses alternating with rib-

bon courses. For the ribbon courses, the use of 12-inch shingles effected a substantial saving in the cost of material with

as tight a job as would have been possible had the longer shingles of the wide course been used in the ribbon course also. Re-roofing was done with 16-inch shingles stained an attractive moss green, which, with the gray of the side walls and white trim, carried out a charming color scheme.

The cost of this sort of remodeling need not be great; in fact, there is no more economical way of overcoming the forelorn appearance of an old house. It is not necessary to remove the paint from the old siding, the shingles are



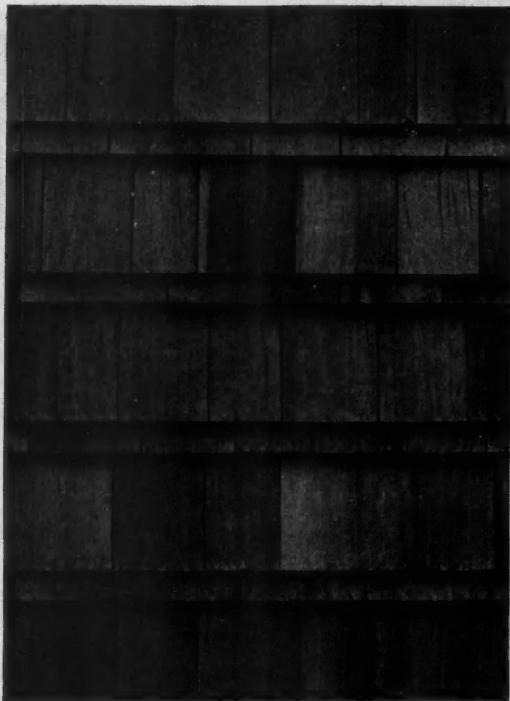
The Floor Plan Was Good and with the Addition of the Sun Room Became Modern.

applied direct to the weatherboards and this eliminates patching while, at the same time, increasing the weather-proof qualities of the walls and providing greater insulation against cold in winter and heat in summer. The decreased cost of heating the house will go far toward paying the cost of remodeling. And the original cost is little more than painting would cost if the old paint had first to be removed.

After being applied, creosote stained shingles require nothing more than a brush coat of stain every five or six years, at a small cost, to renew their beauty and preserve them almost indefinitely. If properly applied with zinc coated nails and stained at the periods mentioned, the shingled wall will last almost indefinitely.

Long, heavy butt, 24-inch shingles have proved the most popular for recovering old siding, as this size allows of exposures up to $11\frac{1}{2}$ inches, giving the wide course lines so much desired in present-day design. However, the 12, 16 and 18-inch sizes are also used extensively, as stained shingles in these sizes, when 100 per cent edge grain, may be laid to $5\frac{1}{2}$, $7\frac{1}{2}$ and $8\frac{1}{2}$ -inch exposures, respectively.

Stained shingles may be obtained in many different colors, giving a wide choice in the selection of



A Very Popular and Economical Sidewall Design of 12-Inch Shingles, Sometimes Called the "Ribbon Course." It is laid with 6-inch exposure for the wide course and 2-inch exposure for the narrow course.



A Section of Wall Recovered with 24-Inch Angle Butt Shingles. Departure from straight lines is made with pleasing results. No extra labor is necessary to lay these shingles as the butts are shaped at the factory.

Twenty-four-Inch Shingles with $\frac{1}{4}$ -Inch Butts Give Deep Shadow Lines to the Side Walls and Allow Wide Exposures up to $11\frac{1}{2}$ Inches. This size is widely used both for recovering and for new work.

color schemes, but the several shades of gray seem to be most popular for remodeling work, as this color harmonizes most often with the surroundings.

There is a wide variety of laying available to give distinction to the house and some of these are illustrated here. The wide exposure is at the height of its popularity today and the wide course and ribbon course, with numerous variations, is frequently seen. Departure from straight lines is also favored and this is possible without extra labor cost by the use of shingles with butts shaped at the factory, as shown in one of the accompanying illustrations.

Recovering old siding with stained shingles is an economical and practical method of beautifying old buildings. It is economical because the cost, in many localities, is little more, and in some cases actually less than the expense of taking off the old paint, patching and repainting the old weatherboards.

While it is impractical to give hard and fast cost figures, due to the wide differences that exist throughout the country in the cost of materials and labor, the following figures, based on averages from various sections of the country, will serve to give an idea of the low cost of shingle-covered walls.



This Triple Course Design Is Laid in Alternate Courses of 9, 4 and 2-Inch Exposure. The 16-inch shingles may be used throughout or the 12-inch size substituted for the 4 and 2-inch courses at a substantial saving.



A Recovering Job Partially Complete. Note that the shingles are placed over the corner boards as well as the siding. A moulding is nailed on sides of window casings to receive the added thickness of the walls. On casings which do not have an extended drip cap the moulding should also be placed across the top of casing.

To rejuvenate an old weatherboard side wall, repairs amounting to \$1.00 or \$2.00 per square (100 square feet) are usually necessary. Many painters charge \$4.00 to \$5.00 per square for burning and scraping off the old paint preparatory to applying the new. Two coats of paint will, in most sections, cost at least \$5.00 per square. This makes a total of \$10.00 to \$12.00 per 100 square feet for a good job of repairing and repainting.

Recovering old weatherboards with 16-inch gray, stained shingles, laying them $7\frac{1}{2}$ inches to the weather, which allows for two full laps, will, in the average market, cost \$10.00 to \$12.00 per 100 square feet. This includes the cost of shingles, zinc-coated nails and labor.

A side wall of 24-inch stained shingles will average about \$13.00 per 100 square feet, while slightly higher in cost the 24-inch size is preferred by many because of the artistic wide course and heavy butt effects which are possible.

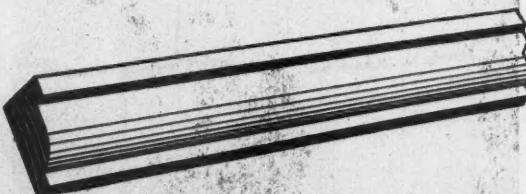
These cost figures readily show that stained shingle side walls cost only a very little, if any, more than re-painting. In some localities prices of material and labor will lower the figures given while in others the cost may be higher.

In considering these comparisons one must not lose sight of the additional ability given the house recovered with shingles to ward off cold in winter and heat in summer, as red cedar shingles are one of the best known insulators. Another very important factor is that of upkeep. Here, too, the stained shingle side walls show a nice saving. In place of re-painting every two or three years only a brush coat of stain every five or six years, at about one-half the cost of a two-coat paint job, is necessary to renew their original beauty, and preserve them against the weather. Such a side wall will give practically life-long service and freedom from practically all repairs.

In applying shingles over old siding, a moulding is nailed on the sides of window casings to receive the added thickness of the walls. On window casings which do not have an extended drip cap, moulding should also be placed across the top of the casing. Three-quarters by 1½-inch moulding of the pattern shown in the illustration will serve for either the 12, 16, 18 or 24-inch shingles.

Four-penny, zinc-coated nails should be used for applying stained shingles over old siding. The 1½-inch length of these nails allows them to secure a firm grip, even when so placed that it is necessary to reach through the space left directly below the butt of the clapboards. It is advisable to renail all loose clapboards before applying the shingles. It is folly to apply a fifty-year wall or roof material with wire or galvanized shingle nails. Zinc-coated nails should be used to insure a life-long service from the shingles.

Following is the amount of four-penny nails required for the different sizes of stained shingles:



This Type of Moulding of $3\frac{1}{4}$ by 1½-Inch Size Will Serve for Any Size of Shingle from 12 to 24-inch.

Pounds
One square of 12-inch or 16-inch shingles
..... 6½
One thousand 16-inch shingles 8½
One square 18-inch shingles .. 5%
One thousand 18-inch shingles 8½
One square 24-inch shingles .. 2½
One thousand 24-inch shingles 8½

There is considerable difference between good and poor cedar shingles. With flat or "slash" grain shingles it is practically impossible to make the smooth, glassy surfaces of the flat grain hold the colors. Even the small amount of color pigment which does not adhere is quickly washed off by the first few rains.

In contrast edge grain shingles give a straight grain free from such surfaces and defects. They readily absorb the stain and retain a maximum amount of the color pigment. The result is uniform, durable colors. The cost figures which have been given here are based on the cost of the best edge grain shingles.



Show Complete Apartments

(Continued from page 161.)

very much. It was rather an expensive proposition to build the apartment, but it is expected that, with slight modifications, this same model can be used when renting apartments in other new buildings. New furnishings will be installed for each new house.

"We have found the model apartment one of the most successful means that we have ever had of renting apartments," Mr. Zeigler said.

The Biggest Dairy Barn in Minnesota

HERE are a number of very good reasons why the barn shown in the photograph below should have been built in the best and most attractive style possible. In the first place, it is only proper that a prize dairy herd should be housed in a prize dairy barn. This barn was built on the Marlowe and Randall farm at Mankato, Minn. Marlowe and Randall own the famous Mankato Holstein herd which includes many notable prize winners, with Sir Pietertje Ormsby Mercedes 14th heading the list.

But, of course, not every dairy herd is a prize herd and so this reason for the fine barn is an individual one. All the other reasons, however, apply to every dairy barn which is built just the same as to this one which is the largest in the state of Minnesota, and perhaps the largest in the entire country.

A great many people have the idea that good appearance in barns is of no importance but right there they make a serious mistake. A piece of property that is attractive looking, neat and well kept has a much higher value whether it be a house or a barn and so an attractive appearance has a real cash value when it comes to the dairy barn. Also the same things which make this barn attractive looking make it a better barn in other ways.

The entire structure, including the two big silos, is built of a glazed tile which has many qualities to recommend it. It is a strong and durable building material and of light weight because of its hollow design. It has withstood a test of 2,000 pounds to the square inch without failure. The hollow feature makes it not only light but also gives a high degree of insulation so that the barn is warm in winter and cool in summer. This means a saving in the cost of extra winter feed and a healthy productive herd of cows.

This tile is manufactured from a finely ground mixture of genuine fire clays, vitrified and baked at an extreme high temperature. Because of this fact it is absolutely

impervious to moisture and the buildings constructed of it will never be in danger of dampness, another essential for the proper care of the cattle, as well as for human beings.

Of course a barn built of this material never requires any painting and the upkeep is virtually nothing. It is easily cared for and the reduction of labor means a material saving. Walls of this type are, of course, fireproof, which means not only reducing the danger of loss from fire but also reducing the expense for insurance.

Tile units are made with a face of 5 by 8 inches and thicknesses which permit the construction of walls in thicknesses in multiples of 4 inches. They are so designed that the webs line up one directly over the other, giving maximum strength and stability. The original cost of construction is low, comparing favorably with other materials, and with the question of upkeep considered this tile can never be considered an expensive building material.

When it comes to the question of appearance, the fact that this tile is widely used of the construction of attractive homes as well as for all types of farm buildings, is assurance that it will produce a building that is pleasing to the eye. There is a choice of two different faces open to the builder, a smooth face and a matt face, the latter being especially good for house construction.

This big tile barn, at Mankato, is 38 feet wide and 162 feet long with an "L" at one side which measures 30 by 48 feet and two large silos at the opposite sides. It includes, in addition to the usual stalls and feed rooms found in dairy barns, an office, dairy room and boiler room built on the south side and over these sleeping quarters for the farm help.

Many visitors for all parts of the country are attracted to this famous Mankato farm and the owners say that they are constantly receiving compliments on the appearance of their barn and silos.



This, the Largest Dairy Barn in Minnesota, if Not in the Entire Country, Was Built to House a Famous Prize Herd of Holstein Cattle and Its Construction, of Hollow, Vitrified, Clay Tile, Makes It a Fine Appearing Building Providing for the Best Possible Care of Its Valued Occupants.

The Home with 20,000 Approvals

By HERBERT C. CROCKER

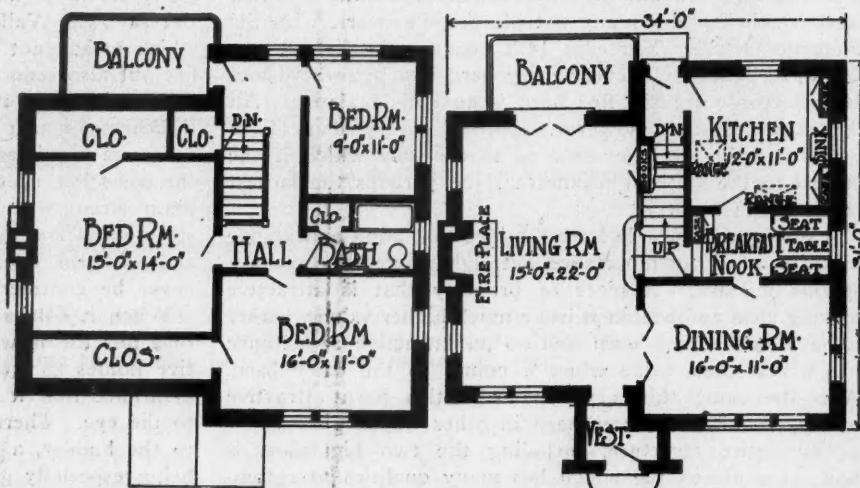
HERE are the plans with exterior and interior views of what may justly be entitled "The Home with 20,000 Approvals." It was planned and built by the Coudy Bros. Lumber Company, located at Granite City, Ill., and when it had been finished and entirely furnished was thrown open to the public for inspection. It was not with an idea of finding a buyer, for the builder erected the residence as a home for his daughter and it was not for sale. The inspection plan was wholly to permit those who might build in the future to get ideas for a home with every possible convenience and filled with artistic ideas. Nothing was left undone to make this an ideal residence and it was unanimously approved by the thousands who inspected it.

The home is of an English type. Although the outer walls are only 33 feet wide and the depth is 34 feet, the residence contains six rooms, a breakfast room, bath and two balconies.

The interior arrangement is practical and complete. As a whole the rooms are large. There is easily enough room space for a family of five or six persons. The plans in this particular case are best suited for a lot that will permit an east or north

front. The vestibule idea permits a northern exposure without any great inconvenience from winter snows and cold north winds.

From the vestibule one enters a spacious living room. It is 15 by 22 feet. The combination stairway is one of the attractive features. The upper floors may be reached either from the living room or breakfast nook and the latter may be closed off with a mirrored door when



The House Is Not Large and Its Plan Is Simple But It Incorporates an Unusual Portion of Comfort, Convenience and Attractiveness.

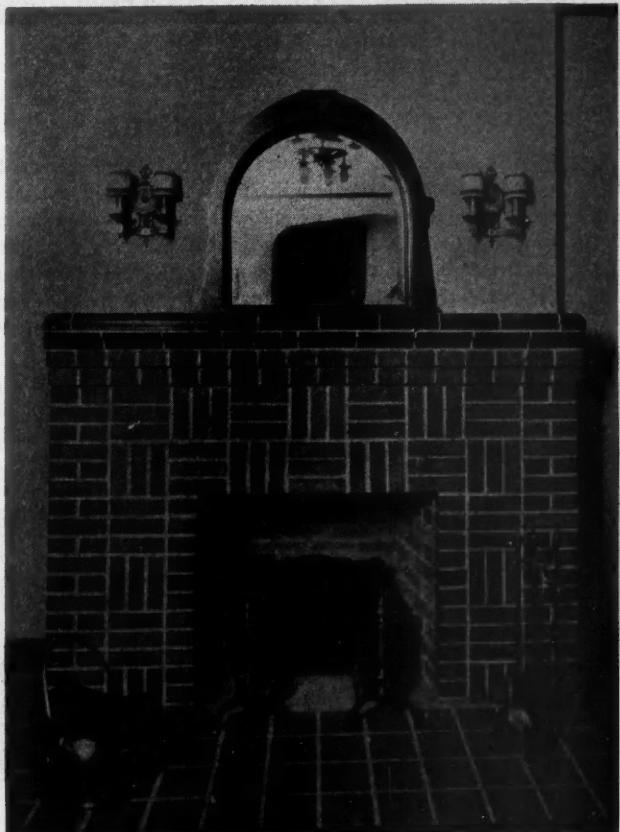


Planned and Built by the Coudy Bros. Lumber Company, This House Was Throw Open for Public Inspection to Permit Future Home Builders of Granite City, Illinois, to Get an Idea of the Best in Modern Home Building.

required. The fireplace, one of very artistic design and having a shelf finished with tile, attracts attention. A niche in the wall space above the fireplace provides the finishing touches. Another niche is built in the wall near the front door and adds to the lighting effect.

The room is provided with sixteen outlets for electric lamps that are to be connected from places along the baseboard or floor. Besides, the walls are dotted with electric connections.

The dining room is rectangular, 11 by 16 feet, suitable



An Attractive Brick Fireplace With Tile Hearth Is a Feature of the Big Living Room.



The Stairway May Be Made a Most Effective Feature of the Home by Attention to Perfection of Design.

for larger than the average-sized furniture. In the space between the dining room and kitchen has been arranged a breakfast room. Ample electric outlets have been installed for various appliances. A closet suitable for the necessary china and linens is one of the features.

The kitchen is 11 by 12 feet. Features of the room include up-to-the-minute plumbing with two large cabinets on either end of the sink and the shelves, drawers and bins are in ample number for everything needed in the kitchen. An electric ice box and a gas stove are the other permanent fixtures.

A balcony has been built at the rear of the living room. This balcony is entered only from the living room and adds to the privacy of the room.

The second floor is entered through a hall. The upper floor rooms are provided with four closets, two of them very large and desirable for storage purposes.

The larger bedroom is 14 by 15 feet. The ceiling is of English design, joining with the walls on a curve. The smaller bedroom is 11 by 16 feet. The third room is designed as a sun parlor but when fitted with a day bed may easily be converted into sleeping quarters or occupied as a sewing room. Another balcony 6½ feet by 12 feet is a feature of the second floor.

Special consideration was given the bath room. Instead of tile or plaster the walls are constructed of special glass tile and their maintenance has been solved for as long as the house remains.

Birch was used for the finish of the first floor while magnolia has been used on the second floor. All of the floors are of oak.



The Dining Room May Be Shut Off from the Living Room by Means of French Doors.



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Built-In Wall Mail Boxes

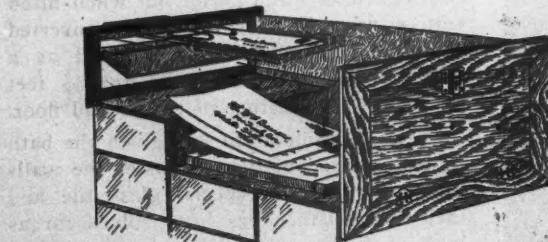
WITH a built-in wall mail box it is unnecessary for the householder to go outside either to mail letters or to receive incoming mail. These boxes, which are

authorized for use in bungalows, residences, duplexes and all flat buildings having separate front entrances for each individual family, are made in three models to meet varying conditions of installation. All are adjustable to the exact thickness of the wall.

The horizontal model is intended for walls of brick, cement blocks, brick veneer, hollow tile or any wall having a thickness of from 8 to 13 inches. Another model, the one shown in the illustration, is intended for frame or stucco faced walls where the wall thickness is less than eight inches. An upright model is designed for use where an

unusually narrow wall space demands an unusually narrow installation.

In each box there is a letter receptacle where outgoing mail is placed. This automatically moves to the outside for collection when the letter carrier opens the mail slot to make delivery. From the outside this box appears as a brass plate setting closely against the wall and bearing the owner's name. It is finished in a special dull brown or tan color. On the interior there is a slot to take mail for collection and a door opening into the box to receive deliveries.



The Type of Built-In Mail Box Used for Masonry Walls and Adjustable to Walls of Any Thickness. This view shows, also, the inside of the box.

A Flexible Glass Substitute

A LIGHT weight, flexible, weatherproof material, made by coating wire mesh with a clear, translucent and semi-transparent substance which will not rub off, dry up or become brittle is a highly desirable substitute for glass for a large number of uses. This material sheds rain, hail and sleet perfectly, and is not damaged by the most severe hailstorm. It is unaffected by extreme cold and will stand a temperature of 400 degrees.

The base is a galvanized wire mesh and the coating can be supplied in the primary colors from stocks or in other shades to order. The natural material is a practically colorless substance. The weight is but one-seventh of a



For Partitions in Offices and Factories as Well as for Many Other Purposes This Flexible, Translucent Material Has Been Found Valuable.

pound to the square foot and it is supplied by the square foot, in rolls three feet wide and any length up to 300 feet.

It has one quality which makes it particularly useful for the raising of animals and plants, for scratch sheds for chickens or for hot beds. It fully admits the ultra-violet rays of the sunlight which are essential to the health of chickens and to the development of vitamins in plants, and which are excluded by ordinary glass.

Some of the more common applications where this material has been found particularly successful are, hotbed and cold frame sash, plant protectors, windows and fronts for poultry houses, scratch pens, brooders, etc., windows and doors of barns, dairy houses and outbuildings, winter screening for storm doors, kitchen porches, etc., sun parlors, children's play rooms, garage doors and windows, office and factory partitions, contractors' sheds, electric signs, color screens, lamp shades and emergency repairs.

If punctured the material can be easily and quickly repaired with a special mending compound.



IN LOUISVILLE

"The attached photographs show a small part of the work that I now have under contract, all of which will be finished with Johnson materials exclusively. A total of approximately 380 gallons of your Stains, Undercoats, Enamels, Varnishes, etc., were consumed on these jobs.

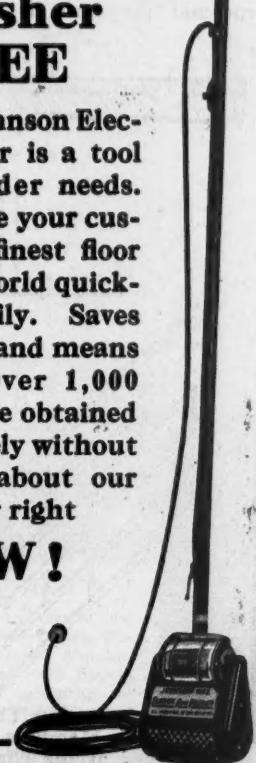
"In addition to using Johnson materials on all of my work, I also use your Electric Polishing Machine with Johnson's Wax on all floor work. This machine is very successful and in addition to giving better results than can be accomplished by hand polishing, is a great labor saver."

**H. H. WAEGRNER, Contractor,
1440 Christy Ave., Louisville, Ky.**

Electric Floor Polisher FREE

The new Johnson Electric Polisher is a tool every builder needs. You can give your customer the finest floor job in the world quickly and easily. Saves time, labor and means profit. Over 1,000 builders have obtained one absolutely without cost. Ask about our Special Offer right

NOW!



For the Exquisite Home the Fine Apartment or the Real Estate Job

Quality—

that will do justice to the most beautiful Home

Reliability—

that you can trust every day for every one of your men on the biggest Apartment

Economy—

Prices that will enable you to get the contract for, and allow you to make money on, the Real Estate Job

NOT by doing cheap work, but because BUILDERS can buy Johnson's materials RIGHT. Ask for Johnson Wholesale prices today!

**Clip this coupon to your letterhead
or card and mail it NOW**

S. C. JOHNSON & SON, Dept. A. B. 3, RACINE, WIS.
"The Wood Finishing Authorities"

Please send me the latest Johnson Wholesale Price List and tell me how I can get the new \$42.50 Johnson Electric Polisher FREE!

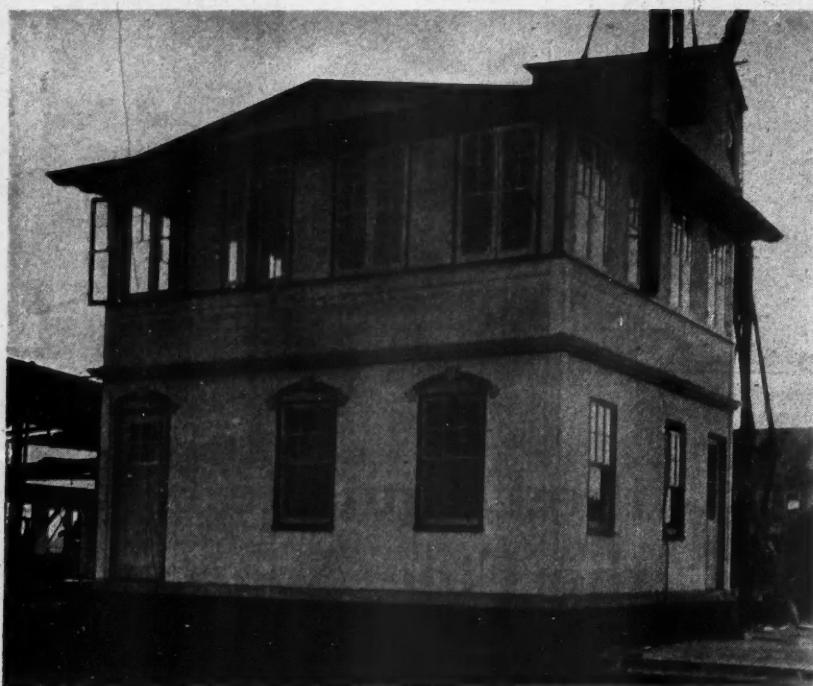
Name.....

Address.....

City and State.....

Pre-Cast Concrete Buildings

OF recent years the development of concrete has presented us with many new ideas in building construction, some of which have been almost revolutionary in their effect on the industry. Not the least surprising of these



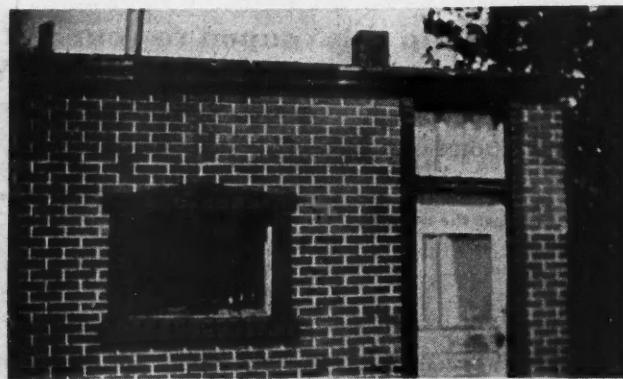
Walls, Floor, Roof and Partitions of This House Consist of Slabs of Pre-Cast, Reinforced Concrete and All Parts Were Assembled at the Building Site.

is a recently developed system of construction which introduces the pre-cast reinforced concrete building constructed of sections cast in a central factory and merely assembled at the building site.

All of the elements, floors, walls, partitions and roof are cast in sections at the factory. Each section is an insulated, reinforced, hollow concrete unit with door and window frames cast in place and doors and windows prefitted at the factory. When foundations have been prepared, in the usual manner, the building elements are shipped to the site and erected by means of suitable, traveling, erecting derricks furnished by the company. Only a couple of days are required for erecting a six-room house on its prepared foundation.

The maximum size of wall slab is 10 by 30 feet as this is most conveniently handled on flat cars. The type of construction used gives increased strength with a reduced weight of floors and other structural parts. A special process and material makes it possible to remove slabs from the forms within an hour after casting and these slabs can be safely erected in a building within 48 hours after casting. When erected, the building is practically a monolithic structure.

With this system there is possible a great variety of texture and color for exterior and interior walls. They may also be given the appearance of brick or cut



A Stucco Wall Finished with the Aid of a New Device Gives a Very Satisfactory Imitation of Brick.

stone or they may be faced with a thin veneer of marble, slate, tile, terra cotta or glass, or treated so as to resemble mosaic or Japanese cloisonne, sculptured effects in *italico*, bas-relief or *sgraffito* effects may be produced from master moulds.

This system is said to be equally well adapted to the construction of buildings of any size or type and it is also applied to the construction of sidewalks and roads. Placed upon the basis of standardized units, permitting an unlimited variety of design, and with the low cost of quantity production and the reduced cost of labor for erection, this system, it is claimed, will make possible high grade, permanent construction at low cost. *

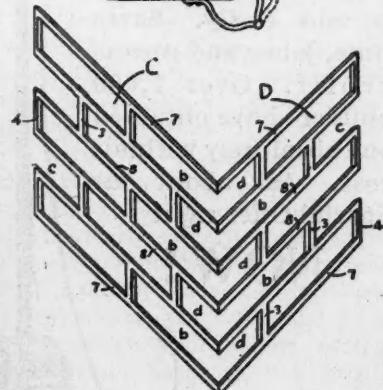
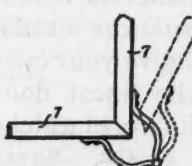
Imitating Masonry Walls

A DEVICE has recently been developed for the marking of stucco and plaster walls to give the appearance of brick, block or stone. This device resembles a grill with members placed in the pattern of the mortar joints between the brick. The intervening open spaces are the size and shape of the brick or other material which is to be imitated. The members are flat on the upper surface and triangular, or rounded on the under side, as shown in the section view at the top of the sketch.

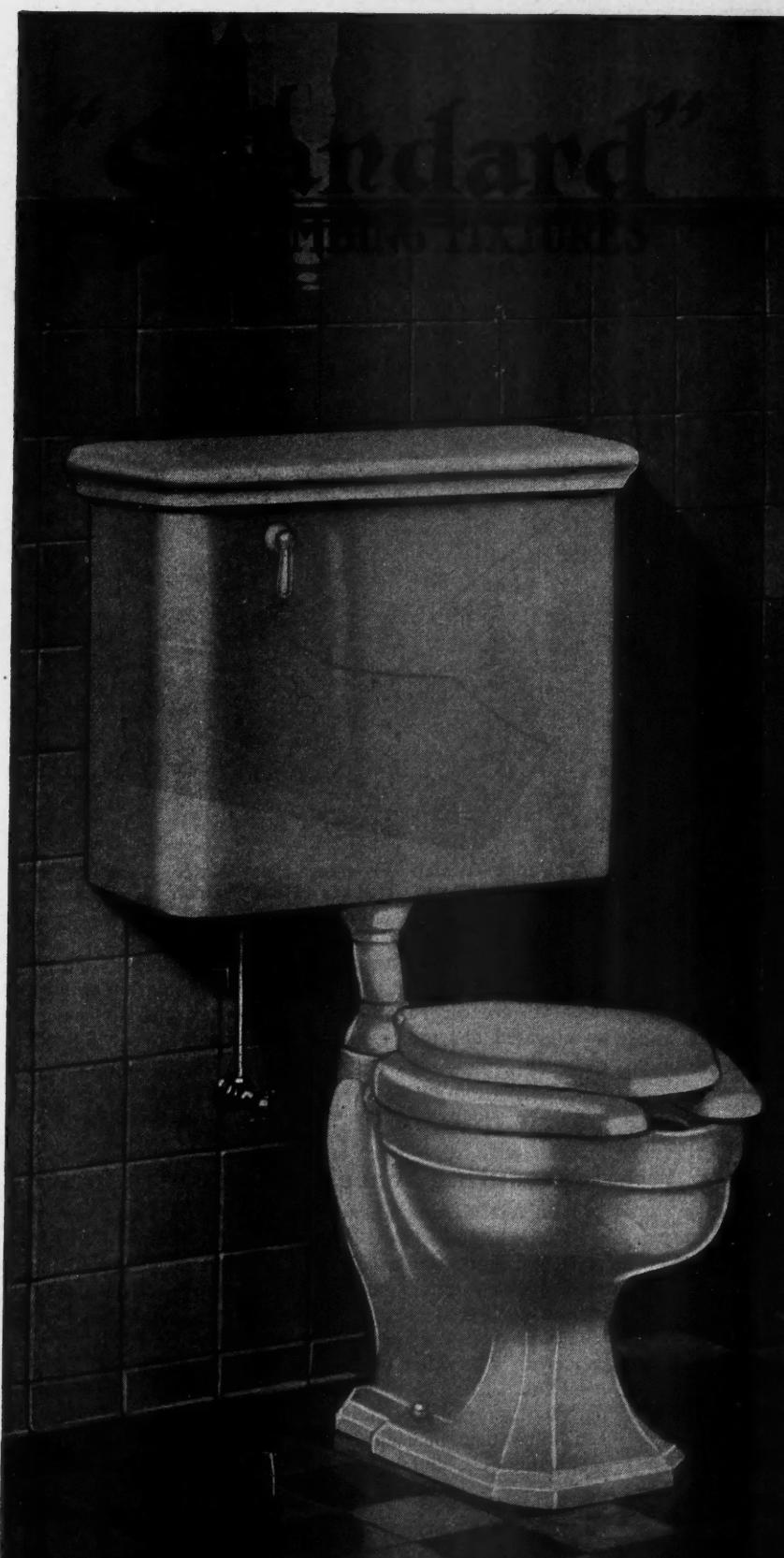
Offset hinges are provided for placing the device around the corners of a building, this being shown also in the sketch.

The lower figure shows a section of the device for working around a corner.

In using this device, the usual first coat of cement is placed on the lath and the device is then placed in position and embedded in the cement as shown in the upper sketch, 5, indicating the first coat of cement and, 6, indicating the finish coat. The finish coat is then applied even with the surface of the form and the form is removed leaving grooves corresponding to the mortar joints in masonry. If the two coats are of different colors this gives the effect of masonry with colored mortar and raked out mortar joints.



Top: A Section Through the Stucco and Device Members. Center: Offset hinge used at the corners. Below: A corner section of the new device for imitating masonry.



F2201

This is Devoro, one of the "Standard" Water Closets. The others are Purimo, Expulso, Ejecto, Siacto—all having the exclusive advantage of the "Standard" Water Control.

SELL THEM BATHROOM PERFECTION

Your houses say the last word for family health and household sanitation when the water closet measures up to the quality of the other "Standard" Plumbing Fixtures.

So here is a satisfying message you can relay to home buyers: "With "Standard" Closets there isn't any question of imperfect sanitation, of danger to health, of embarrassment to family or guests due to faulty operation. These closets are competent. They are lasting. They are quiet. And they are harmonious in design."

In closets, as in baths, lavatories, showers, you can rely on the product of "Standard" factories—on the excellence of materials and workmanship. That universal confidence is one reason why "Standard" is the largest manufacturer of Vitreous Chinaware, of Brass Fittings, and of Enameled Ware.

While the name is enough, the name isn't all. "Standard" Closet leadership is supported by the "Standard" Water Control—a striking development born of years of research and practical tests. This water control is a symbol of "Standard" thoroughness.

Specify "Standard" Closets to increase the selling value of homes built for bathroom perfection.

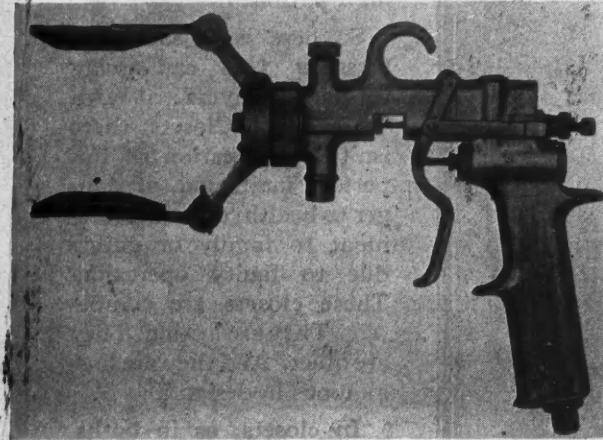
Write on your business letterhead for the "Standard" Catalogue.

Standard Sanitary Mfg. Co.
General Offices
PITTSBURGH, PA.

Improved Spray Painting

WHILE it took nearly 4,000 years to reach the first acceptable commercial turning point in the method of applying paint, at its advent the original spray gun was ridiculed as a "squirt gun," and many skeptical allusions were made within the trade as to its performance. But the new method very soon proved the clearness of the inventor's vision, for today spray painting equipment is established as an important factor within the industry.

A new appliance which extends the field of spray painting is an attachment which enables the spray operator to include every line within the architectural and industrial finishing fields. This little auxiliary makes possible the painting of trim, i.e., windows, doors, moldings, wall fixtures, sinks and also the painting between ceilings and



Late Development in Spray Painting Equipment Which Makes Possible Painting of Trim and All Other Fine Detail Work.

walls, washboards and floors, and even the painting of window sash in volume, thus efficiently completing exterior and interior operations with greater facility, while two color work in such products as automobile bodies and furniture can be completed without masking and any desired surface can be protected.

The illustration shows this spray painting device, carrying all attachments necessary to do all or any part of painting heretofore performed by the bristle brush. When one considers that in commercial use this spray gun has demonstrated superior surfacing of a 3 feet by 6 feet four-sash window frame within four minutes, one can get a fair impression of its possibilities.

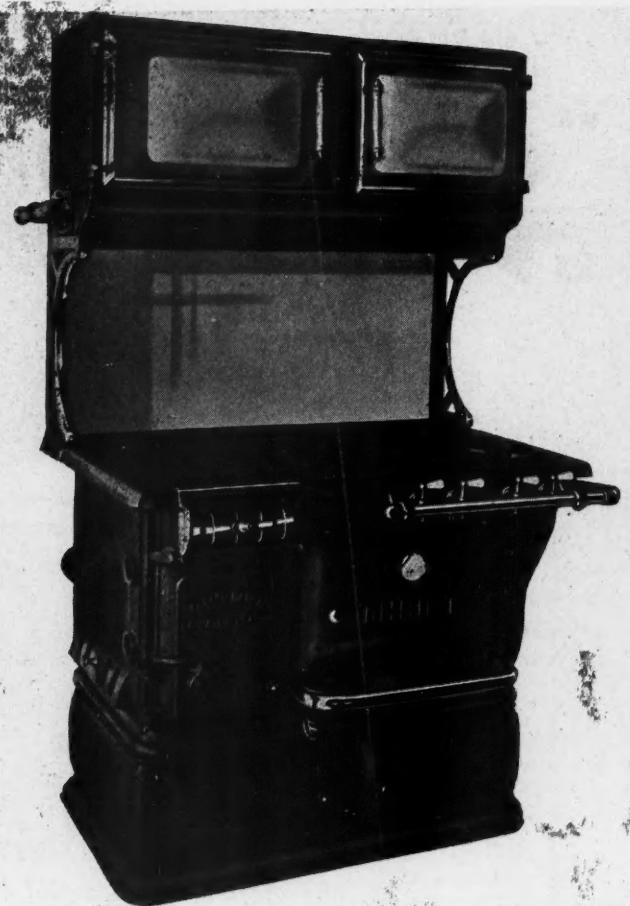


Hot Water Heating From a Range

IT is a recognized fact that there is far more than enough heat in the coal consumed in the average kitchen range to do the required cooking and baking. The utilization of this surplus heat to provide not only hot water but also water heat for the entire house is the object of a type of range which has stood the test of long continued use under varied conditions. With a minimum of coal consumption it is capable of heating the average six or seven room house in a satisfactory manner.

In addition to the small water back which provides ample hot water at all times, this range contains a large water back in which water is heated through a travel of 17 feet and circulated through the radiators in the various rooms of the house. Practically all coal gases are burned before passing up the flue and the manufacturers state that these ranges have furnished heat at a saving of 40 to 50 per cent over other types.

The range is simple to handle and can be cared for by



A Range Which Provides Hot Water Heat for the Entire House and Utilizes Heat Which is Ordinarily Wasted.

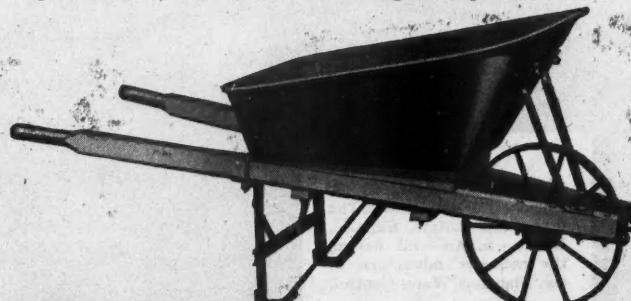
a child as there is no heavy labor or drudgery needed. A by-pass is provided to allow for free circulation when all radiators are turned off. For those who wish to use gas, an elevated gas top, consisting of a large oven, a broiler and a three-hole burner plate, can be furnished. As radiators can be placed on the same floor with the range, it is admirably adapted to the modern cellarless house.



Measuring Wheelbarrows Introduced

A LEADING manufacturer is introducing two new types of wheelbarrows. The barrows are designed for general contracting work, and are the result of a demand for a type of barrow of an accurate capacity to be used in measuring ingredients.

One of these holds exactly 4 cubic feet of material, struck capacity. The other holds exactly 3 cubic feet of material, level full. Both of these barrows embody all of the company's improvements, including the 10-stroke wheel with self-lubricating bearings, channel steel riveted legs, hard maple handles, and other interchangeable parts.



This Measuring Wheelbarrow, Designed for General Contracting Work, Has a Capacity of Exactly Three Cubic Feet, Level Full.



6500 square feet of Celotex Insulating Lumber was used as insulation with plaster applied directly to its surface in this residence of H. C. Wehnmann, in Interlachen Park, Minneapolis. C. J. Bard was the architect, and the Holm-Johnson Company the builders.



J. T. Johnson, of the Holm-Johnson Company, Minneapolis, builders, says:

"We urge the use of Celotex in every house we build. It does more than insulate; it makes the house stronger—and at such little cost."

Insulation at little or no extra cost

Builders find insulation made PRACTICAL with Celotex Insulating Lumber

BUILDERS (and home owners, too) are coming more and more to realize the advantages of house insulation. Yet ordinary insulating materials are quite an added expense; not to be considered when building costs must be figured closely.

Celotex Insulating Lumber, however, gives insulation at practically no extra cost, because it takes the place of other building materials.

How Celotex is used

Used in outside walls, as sheathing, Celotex replaces ordinary wood sheathing and building paper. This use of Celotex gives an insulated wall at no more, and often less, than the cost of ordinary construction. And Celotex is several times stronger in wall sections than wood sheathing.

On inside walls plaster is applied directly to the surface of Celotex in place of lath. This gives a better bond than lath

and plaster. It costs a little more but it gives a stronger insulated wall. It also makes the house quieter, for Celotex deadens sound; an especially desirable feature in apartments and double houses.

Celotex is the only effective insulating material that provides this greater strength in the house walls and is not an extra item in the building.

The proper use of Celotex makes houses winter-warm, economical to heat, summer-cool, quiet, strong and durable. (Good points if you are building to sell.)

Saves labor and material

Celotex is economical to apply—it saves both labor and material. The broad, strong boards can be sawed and nailed just like wood lumber and with less waste in cutting and trimming.

Get all the facts

Progressive builders are using Celotex

to get more business and to help establish their reputations for building better houses.

Ask your architect or lumber dealer to tell you more about Celotex. All lumber dealers can supply it. Leaders in these lines advise its use.

And send the coupon below for complete details that show just how Celotex is used and its many advantages to you as a builder.

THE CELOTEX COMPANY, Chicago, Ill.

Mills: NEW ORLEANS, LA.
Branch Sales Offices in many principal cities
(See Telephone Books for Addresses)



HOW CELOTEX IS USED

Celotex is used in outside walls as sheathing, replacing wood lumber and eliminating the use of building paper. On inside walls plaster is applied directly to its surface. This eliminates the use of lath. Results: more comfort, greater strength and security, longer life and less upkeep expense.

Look Ahead! The practice of building heat-leaking houses is fast coming to an end. Far sighted builders are using Celotex to establish a reputation for building modern, comfortable homes.

CELOTEX
INSULATING LUMBER

THE CELOTEX COMPANY, Dept. T 143,
645 N. Michigan Avenue, Chicago, Ill.
Send the Celotex Building Book and Specification Book, free.

Name _____

Street _____

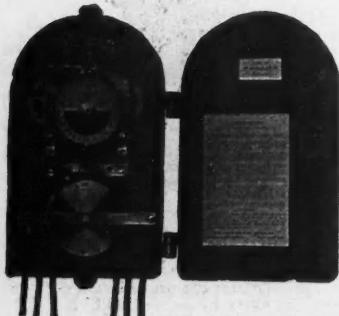
City _____

Amer. Bldg. - 8-26

State _____

Reliable Time Switches

AUTOMATIC time switches are designed, primarily, to control show window lights and electric signs, but they also have a number of other important fields among which are banks, railroads and apartments, where they are used to turn on hall lights at a certain hour, switch them to night lights later and turn these off in the morning. The installation of an absolutely reliable time switch for any of these purposes is a profitable investment.



An Automatic Time Switch Adapted to Many Uses in Addition to Controlling Show Window Lights.

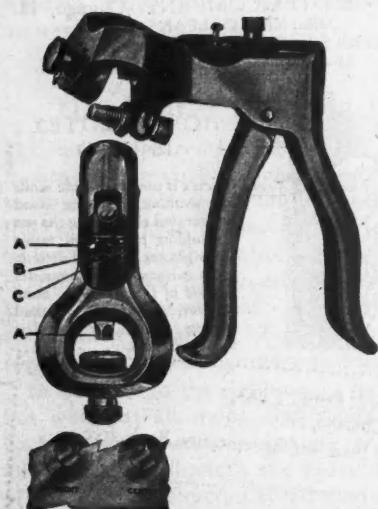
Sunday operation, yet another is similar to the first except that it throws the lights on and off twice daily.

The fourth type is a two rate meter service control, intended especially for central station use. The last type is known as the apartment house switch and throws on the main hall lights early in the evening, cuts these off at bed time and throws on a series of night lights which burn all night, then cuts these off at daylight. Where special requirements are to be met the manufacturers also quote special prices for special designs.



An Improved Saw Set

A NEW, pistol grip, saw set features an oscillating plunger which enables the user to set the plunger to a pitch of the tooth, so that when setting the saw the plunger comes into contact with the tooth at the proper angle and does not interfere with any other tooth, either ahead or back of the one being set. This makes it possible to set the teeth on both sides alike, thereby clearing the saw equally on both sides and preventing it from cutting or running to one side. Being set equally on both sides makes the saw easier to file and have all teeth alike.



This New Saw Set Eliminates Contact with the Teeth Already Set Making a Perfectly Set Saw.

Heretofore saw sets have had the plunger in a stationary vertical position only, and while setting the saw, the plunger would come in contact with the tooth set on the opposite side and had a tendency to straighten the tooth back to its former position, making the saw one sided.

This saw set is easy to operate. In setting a rip saw the top spring is lifted and the plunger turned to one

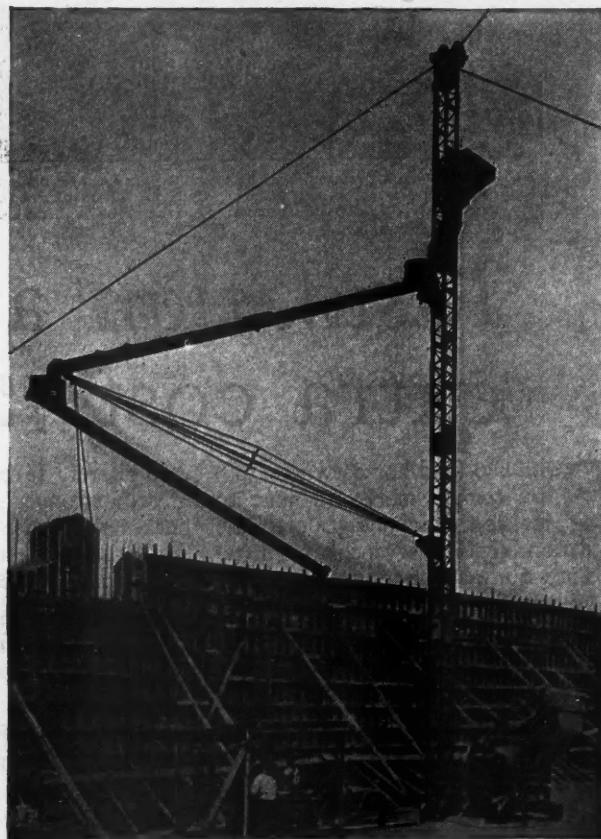
side to the figure "A," and the spring pulled back in place again. The saw is set on one side and the plunger then changed to the other side at "C," and the other side of the saw set. If the saw has vertical teeth the plunger is set at the vertical position "B" and both sides are set without changing.



Chuting Plants Improved

IMPROVEMENTS have been made on a well known line of concrete chuting plants which add greatly to their usefulness. This new design permits the bucket to dump $7\frac{1}{2}$ feet from the top of the mast whereas in the former construction it dumped $22\frac{1}{2}$ feet from the top of the mast when the boom chute type of plant was used. In other words, a mast 15 feet shorter has the same effective horizontal reach. In addition to this the truss strut type of construction has been made more simple to erect.

The buckets are made in two sizes with capacities of



Here Is the Improved Model of a Leading Manufacturer of Concrete Chuting Plants.

7 cubic feet and 14 cubic feet. In each the water measure is sufficiently in excess of the rated capacity to take care of any tendency to slop when in operation. The smaller bucket may be used on either a steel or wooden mast while the larger bucket is adapted for use with a steel mast only.

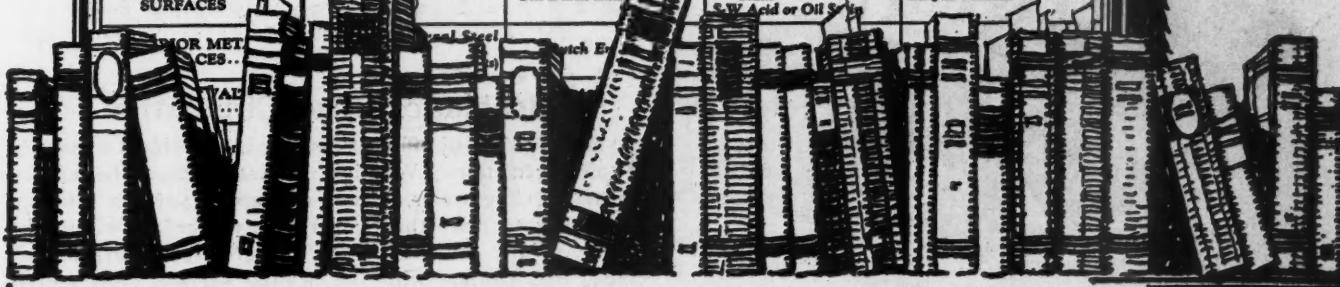
The steel mast is made in 15-foot sections up to a height of 135 feet for either size bucket and comes completely equipped with 12-inch top and bottom sheaves for hoisting line and the short swing chute which passes through the mast. The recommended maximum height of the wooden mast is 75 feet, except where it runs up the side of a building to which it can be tied. Under such conditions the wooden mast can be run up to any practical height.

ARCHITECTS' PAINTING GUIDE

FOR PAINTING • VARNISHING • STAINING AND ENAMELING

IMPORTANT: Each of the products specified below bears our name and trade mark

SURFACE	TO PAINT Use products named below	TO ENAMEL Use product named below	TO STAIN Use product named below	TO VARNISH Use product named below
BRICK WALLS (ext)....	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CONCRETE WALLS....	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CEMENT FLOORS.....	S-W Concrete Floor Paint	S-W Concrete Floor Paint		
EXTERIOR WOOD SURFACES	S-W Exterior Wood Surface Paint	Old Dutch Enamel, Gloss	S-W Preservative Shingle Stain S-W Acid or Oil Stain	Regular Varnish
INTERIOR METAL SURFACES...	S-W Metal Surface Paint	Old Dutch Enamel, Gloss		
WALLS				



A "five-foot shelf" of paint lore condensed on a single page!

Yes, sir, we mean just that! Let us explain—

Here on one page are the boiled down recommendations of a score or more of expert paint chemists, correlating the technical data and practical tests of every kind of finish for every kind of surface under every kind of condition—and the results of 60 years' experience in paint research and manufacture—enough material to fill a five-foot shelf of paint lore!

These accurate recommendations were released after 6 months of final review and compilation.

Your reputation is at stake every time you let a sub-contract to a painter. The reputation of the world's largest manufacturers of paints is at stake when we recommend this guide to you.

Play safe! Insist that your painting contractor follow this guide.

Then say to your customers and prospective buyers—"The finishes on this job are *right*. They are 100% Sherwin-Williams."

In the minds of the public, "Sherwin-Williams" stands for "quality in paints." Therefore, you can't go wrong in using this Guide. Send coupon for a copy today.

THE SHERWIN - WILLIAMS CO.

DEPT. C, 407 CANAL ROAD, CLEVELAND, OHIO

NOTE: For your convenience we maintain a free Decorative Studio Service. Experienced decorators will sketch and recommend decorative schemes for interiors or exteriors of your buildings.

There is no red tape attached to this offer. Just give us a description of the building on the specification sheet which we will send you on receipt of coupon.

When offering houses for sale, make capital of the fact that the decorations were designed by experts. The coupon will bring specification sheets.



THE SHERWIN-WILLIAMS CO.,
Dept. C, 407 Canal Rd., Cleveland, Ohio.

Send me copy of Architectural Painting Guide.

Send me your specification sheet.

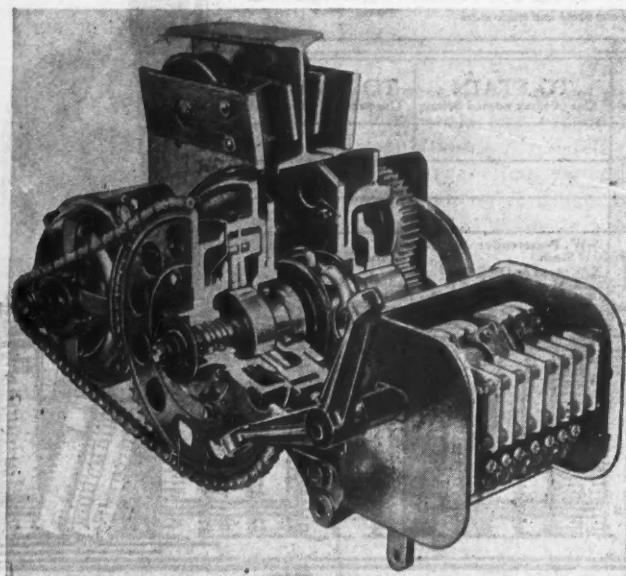
I am building.....(fill in kind of buildings) and would like to receive suggestions from your Decorative Studios. No obligation.

Name

Street..... Place.....

Electric Chain Hoist

A RECENTLY developed ball-bearing electric chain hoist is the result of twenty years' experience in developing and building electric hoists of $\frac{1}{4}$ to 2-ton capacity. It embodies such features as close headroom, long lift, higher speed, automatic top and bottom limit stops, and greater over-all strength. This hoist has very unusual



An Electric Chain Hoist Embodying Many Features Developed Through 20 Years of Experience.

factors of safety in the strength of the load-supporting members and is designed to withstand shock loads so common to this class of equipment. All suspension members are made of the highest quality steel.

This hoist can be quickly adapted to any overhead system. The side plates of the trolley carriage can be spaced on steel bars to fit the desired beam flange.

Electrically welded steel chain can be furnished for varying lengths of lift. The centralized steel suspension means a constantly balanced load on the trolley wheels and hoisting unit irrespective of load position. The mechanism is fully enclosed in oil-tight chambers and is compact and easily accessible for inspection without expert service. The ball-bearing load sheave, the latest development, adds a big factor for low current consumption and general all-around hoisting efficiency.

Large chrome vanadium steel ball bearings surrounding the substantial steel sheave reduce friction and make the hoist still more efficient, requiring a minimum amount of power and giving increased life.

Steel chain containers can be furnished to hold any length of slack chain up to 60 feet for $\frac{1}{4}$, $\frac{1}{2}$ and 1-ton hoists and 30 feet for the 2-ton hoist. These containers are secured to the under frame of the hoist and do not affect the headroom.

The Perfect Weathercaulking

THERE is being manufactured today a caulk that has many advantages over the old methods used. In fact, the newly produced material answers and fills a new purpose of its own.

Putty, which is the substance replaced by this new caulk, is a composition composed of limestone and quick-drying oils. It soon hardens, then chips off easily. The open spaces thus harden and the job must be done over again. This is unnecessary with the new caulk.

The caulk never hardens nor does it cake nor crack. It has the properties, when exposed to the air, on the outside, of remaining in a satisfactory hard condition, and it expands and contracts with the surface to which it is applied. It never "dies."

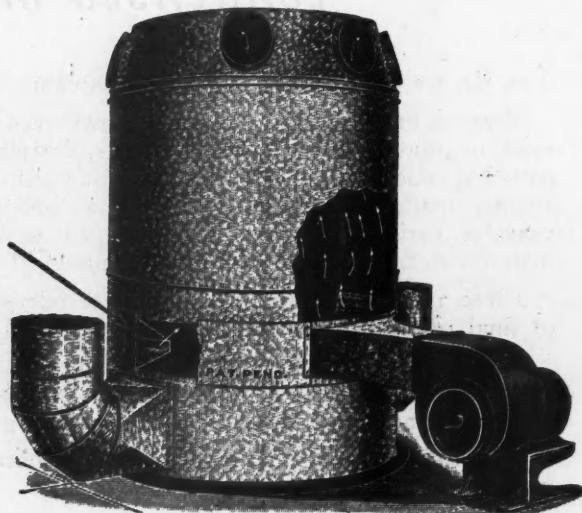
With the use of this new caulk one can fill up cracks in bricks, rocks, concrete and even stucco, even if they should admit dampness and water or cold air. With the new caulk all these cracks are hermetically sealed, thus stopping further disintegration. The caulk fills up the cracks. When you have cracks in the sides of walls of the house you can fill up the spaces between the bricks with the caulk. Again, it may be used in glazing skylights, greenhouse windows, factory windows, the same as you would use putty.

The manufacturers, who are well known producers of putty, paints, varnishes, etc., guarantee the product to last for fifteen years. It is made of volatile oils and special pigments. It can be applied with a putty knife as well as with a gun, and is inexpensive.—OLIVER S. ARATA, St. Louis, Mo.

Mechanical Heat Circulation

THE problem of efficient heating is a problem of proper air circulation. Whether a heating plant be of the warm air, hot water, steam or vapor type its ultimate purpose is to raise the temperature of the air within the rooms to the desired point. In gravity circulation air comes into contact with the heating surface, rises and is replaced by other air, establishing a natural or gravity circulation. The difference in weight between warm and cold air is never great and, since gravity circulation is dependent upon this difference, it can never be entirely satisfactory.

Because of these facts many systems of mechanical circulation have been applied with varying success and one



This Mechanical Heat Circulation System Has Been Said to Effect Savings as Great as 40 Per Cent in Fuel Consumption.

of these is said to have made savings as great as 40 per cent in the fuel consumption. This system draws cold air from the rooms to the heated surface of the radiators or furnace, forces it over these heating surfaces in an evenly distributed way creating a forced circulation.

To install this system it is only necessary to cut a slot in the casing of the furnace into which the distributing device is set. Air is drawn from the rooms by a motor driven fan which can be connected with any heat regulator. There are no dampers or other adjustments and, once properly installed, this system requires no further attention.



Here's the place to cut building costs

IF you want to get to bed rock with operating costs, the timekeeper's shack can tell you an interesting story.

Put Carney on your next job—then compare your mortar and labor cost with an old time and material sheet. You'll find you have saved money.

There's a reason for this big saving. In the first place, Carney comes ready to mix. You don't have to pay men for adding lime, soaking and slaking—that's all eliminated in Carney. All that is necessary, is to mix sand and water with Carney. Besides, Carney mortar speeds up the masons, decidedly. It is very smooth and plastic, and its slower setting quality saves a lot of costly time, tamping and tempering on boards.

To these advantages add this:—Carney takes 4 parts sand instead of 3, which reduces your cement bill five per cent. Is it any wonder that contractors are strong for Carney?

THE CARNEY COMPANY

District Sales Offices: Cleveland, Chicago,
Detroit, St. Louis and Minneapolis

Specifications:

1 part CARNEY
to 4 parts sand.

Cement Makers CARNEY *Since 1883*



CARNEY

for Brick and Tile Mortar

Genasco

LATITE



Locked on!

Exclusive with Genasco Latite Shingles—this patented "key" locks each shingle tightly to those underneath. A feature that makes Genasco particularly adapted for laying over old wood shingles. The "key" is invisible on the completed roof, but it makes the roof absolutely storm tight.

Look at the back view of a Genasco Latite Shingle. See the "key" and how it is attached to each shingle—how it locks to the other shingles. Note the double-thick butt made by the turned-under corner of the shingle—giving the completed roof a distinctive texture—a marked improvement on the flat, monotonous appearance of ordinary roofs.

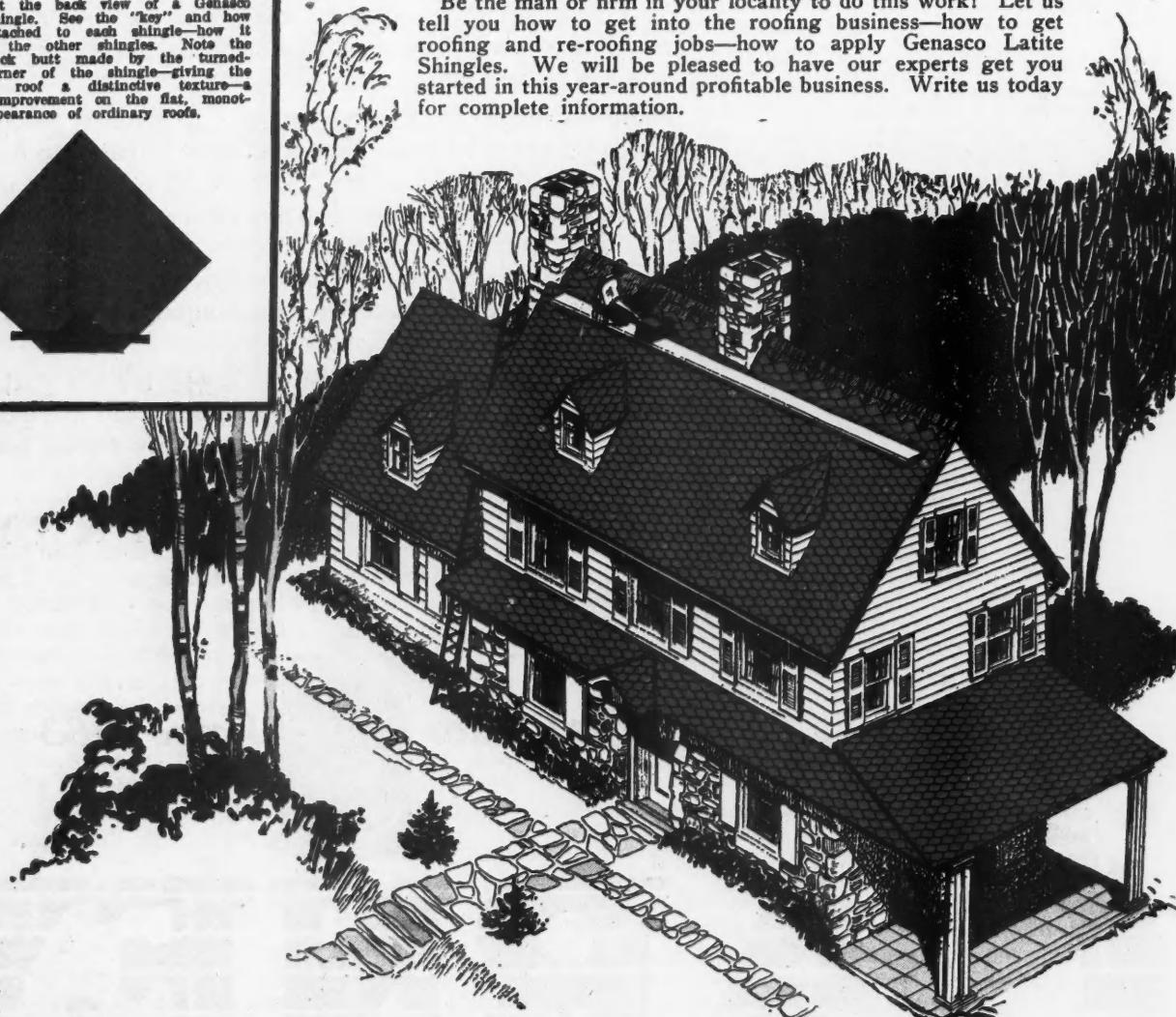
Back view

Make money applying Genasco!

Here is business that every builder and contractor can readily get—and easily take care of. Not only re-roofing buildings, but applying Genasco to those to be constructed—and every time one of our series of double-page color advertisements appears in the Saturday Evening Post it stirs up business-reaching as it does more than ten million readers.

It makes them familiar with the merits of Genasco Latite Shingles. Tells them of the long-fibred rag felt, saturated and then coated with Trinidad Lake Asphalt Cement, making Genasco impervious to all weather. Tells of the granulated slate surface, which makes Genasco fire resistant. Tells how Genasco Latite Shingles are laid right over old roofs without the dirt, bother, time and expense of tearing off the old shingles.

Be the man or firm in your locality to do this work! Let us tell you how to get into the roofing business—how to get roofing and re-roofing jobs—how to apply Genasco Latite Shingles. We will be pleased to have our experts get you started in this year-around profitable business. Write us today for complete information.



Genasco Latite Shingles

Reg. U. S. Pat. Off.

protected!



Genasco Roll Roofing

For farm buildings, factories, train sheds, warehouses, lumber sheds, storage buildings—wherever a high-quality roofing is desired at a moderate price, but where a roofing as ornamental as Genasco Shingles is not considered absolutely necessary. Furnished in either smooth surface or slate surface. Each roll contains a supply of Kant-Leak Kleets, an excellent roof-fastening device.

Genasco Slate-Surface Roll Roofing has the added qualities of more attractive appearance and high fire-resistance. Three different colors—red, green, blue-black—all unfading.



Treasure dug from a lake!

Trinidad Lake Asphalt is dug from the surface of Trinidad Lake with mattocks. For a quarter-century it has stood the test in Genasco roofs. It is the unequalled foundation that has made the line of Genasco Roll Roofings and Shingles so famous.

The Genasco Line also includes the following products—write for information regarding them.

Genasco Asphalt Putty (Roofing Cement)
 Genasco Deadening Felt
 Genasco Insulating Paper
 Genasco Red Sheathing Paper
 Genasco Wall Lining

The Barber Asphalt Company

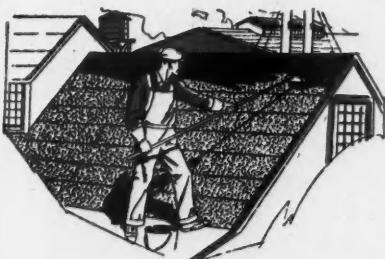
PHILADELPHIA

New York St. Louis Chicago
 Pittsburgh Kansas City
 San Francisco



Genasco Sealbac Shingles

The straight conventional type of shingle is preferred by some building owners—and Genasco Sealbac Shingles, individual or strip, are the shingles for them. Made of the same high quality material as Genasco Latite Shingles, including the famous Genasco "Sealbac" feature. Three colors—red, green and blue-black. Genasco Sealbac Shingles also furnished in multicolor.



Genasco Roof Coatings

To preserve smooth-surface roll roofings, roof coating should be applied every two years. It adds to the life of a roof and helps maintain its waterproofing qualities.

Genasco Roof Coating is a heavy black liquid asphalt which dries to a tough elastic coating. Shipped ready for use—1 and 5 gallon pails, and 50 gallon drums.

Genasco Asphalt Fire Coating contains asbestos fibre. It permits a much heavier application and there is no danger of flowing in hot weather. Can be had in 1 and 5 gallon pails, and 50 gallon drums.



Genasco Stucco Base

As a base for the application of Portland Cement and Magnesite Stucco, this Genasco product has all these desirable qualities: Cannot sag or bulge, cannot rust or trap water; windproof, waterproof, vermin-proof; and economical besides. It is made of high-grade felt thoroughly saturated and coated with asphalt in which granules of calcite are imbedded to act as a "key" or "anchor" for the stucco. Furnished in rolls 36 inches wide, sufficient to cover 100 square feet.

Genasco Protective Products

Reg. U. S. Pat. Off.

A Novel Construction Method

A N innovation in building material and building methods that may have a profound effect upon many phases of the industry has made its appearance in the market. This is a system of erecting reinforced concrete frame structures with fibrous moulds or blocks.

The new material and the new method can be described simultaneously, for they are mutually interdependent. Both are the patented invention, after eight years of research and experiment, of James Monroe Hewlett, a former president of the Architectural League and a director and fellow of the American Institute of Architects. Mr. Hewlett worked from 1914 to 1922 before the first manufacture was ventured.

The material is a block made of shredded fibres of such vegetable growths as palmetto, corn stalks and saw and marsh grasses. The fibres are condensed, under air pressure and a chemical treatment, into a block about eight times the size of common brick, and measuring in standard size 4 by 8 by 16 inches. Through the block, vertically, run two holes four inches in diameter. When the blocks are laid up into a wall in the manner of bricks, the holes form a continuous mold for reinforced concrete construction. Thus the blocks are at once the form and the wall.

Further, they combine all the light weight or protective units of the wall, i.e., the insulation, waterproofing, furring, lath, and scratch-coat. This wall is not intended to be a finished wall as such; it may be covered with stucco, brick, shingle, or clapboard inside. For stucco and plaster, the rough, non-rigid surface of the wall furnishes the ideal key and reinforcement.

These walls, due to their concrete reinforcements, have very great strength. The interior concrete frame is one solid, continuous unit throughout which will not warp or settle and which is protected against fracture by heat, frost, or shock. Tests made at the Massachusetts Institute of Technology upon a wall section 8 inches wide, 32 inches long and 8 inches high, containing four columns, showed a safe load on the wall of 19,000 pounds per running foot, four times as great as the average frame wall.

The fibre moulds themselves are, despite their appearance, incapable of burning. The chemical treatment which they have undergone has not only made them resistant to even direct flame, but it has destroyed their capillarity so that they are moisture proof. Similarly they are vermin-proof. Their substance and nature makes them also highly efficient nonconductors of sound or heat.

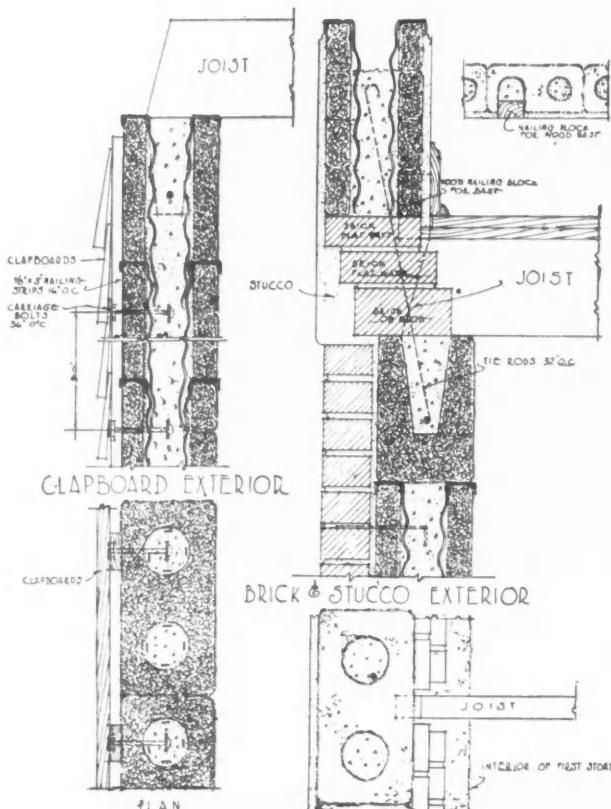
The handling of the blocks is simplified by the fact that one block is equivalent in volume to eight bricks in volume though to less than one brick in weight. This is important especially in delivering to scaffolding. It also makes it possible for a three-ton truck to take in one load, all the required material for the walls of the average five or six room house.

In cost, the new method figures up to \$632.50 per 1,000 square feet of laid-up wall surface. This is figured without transportation and based on average costs for New York and New England.

One of the most outstanding features is the speed of constructing a wall out of these blocks. Recently one mechanic and two laborers erected all the wall surfaces for a six room house in three and one-half hours.

Some of the specification figures from the company's catalogue are interesting. For each 100 square feet of wall surface 8 inches thick, 225 blocks are required. The amount of concrete mortar required to fill the holes in each thousand blocks is 2.4 cubic yards of 1-2-4 mix, which requires 14 bags of cement.

Different types of blocks, of course, are supplied for the different parts of the construction. A girth block measuring 12 by 8 by 16 inches, a floor block 8 by 16 by 20 inches and partition and furring blocks 4 by 16 by 20 inches may be had for their various purposes.



Sketches Showing the Design of the Block, Method of Wall Construction and Application of Reinforced Concrete.



This House Under Construction Shows the Rough Wall Built of the New Fibrous Block.



The Same House with the Exterior Walls Finished with
Stucco Applied on the Blocks.

Comfort



—that's what they want
—that's what they'll pay for

NOW home comfort has been trade-marked—to help you sell houses faster. The trade-mark of the Triple Insulated Home carries an assurance of comfort that turns prospects into customers.

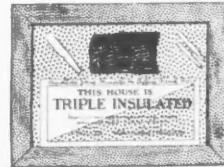
Comfort is built into Triple Insulated Homes with (1) Houseline, a building insulation that acts as a comforter or overcoat around the house, (2) Improved Asbestocel, which stops heat waste from heating systems, and (3) Asbestos Shingles, which

—that's what you sell them
—in a Triple Insulated Home

give comfort of mind by preventing roof-communicated fire and will last forever.

The trade-mark is in the cellar wall — visual proof of hidden value. And besides, each house is formally registered by Johns-Manville. These are important aids in selling but they are only part of what we have done to make selling easy.

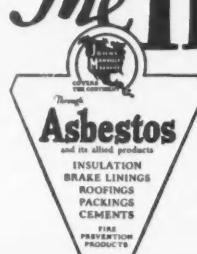
Ask about the complete plan and let us help you stimulate your turn-over.



This "trade-mark" built into the cellar wall identifies a Triple Insulated Home.

The Triple Insulated Home

A Johns-Manville idea



JOHNS-MANVILLE Inc., 292 Madison Ave., at 41st St., New York City
Branches in 63 Large Cities

For Canada: CANADIAN JOHNS-MANVILLE CO. Ltd., Toronto



HOW DAN DOES IT.

A Department for Passing "Life Savers" along to other Builders.

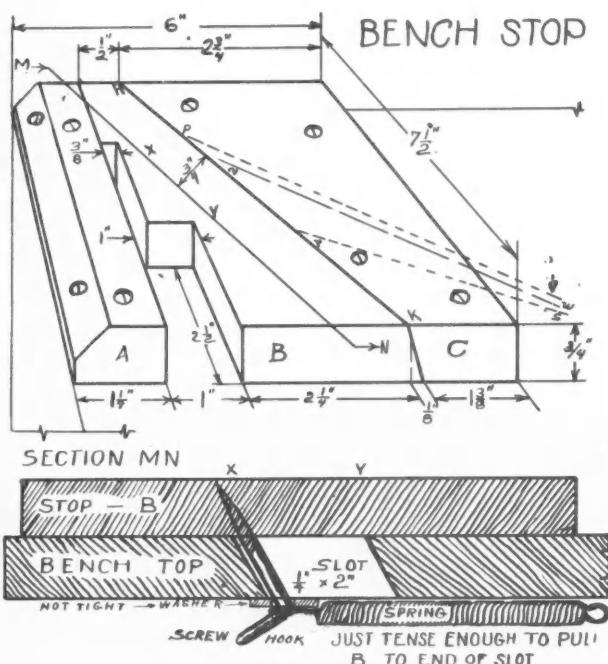
\$2 for an Idea

Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is going to edit this Department and will pay \$2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 1827 Prairie Avenue, Chicago, Ill.

Ever-Ready Bench Stop

THIS is the best bench stop I ever used. It holds the work straight and with a good grip. It does not mar corners nor finished surfaces. But it has had one serious fault. The movable block (B) was always out of position, or else lost among the shavings, so I am presenting it with several improvements. The dimensions have been adjusted and tested. A spring and screw hook have been added to hold block B in a ready position to receive work.



This Sketch Shows How a Bench Stop May Be Built Which Will Serve as a Valuable Aid to the Workman.

The slot through the bench top, as shown in the section MN, extends from X to Y on the perspective plan, and runs parallel with the diagonal wedge line (HK). As shown in the section, the hook stands in close position. When open, this stop will take work 1 1/8 inches thick. Anything heavier "will stand without being tied," and is butted against the end

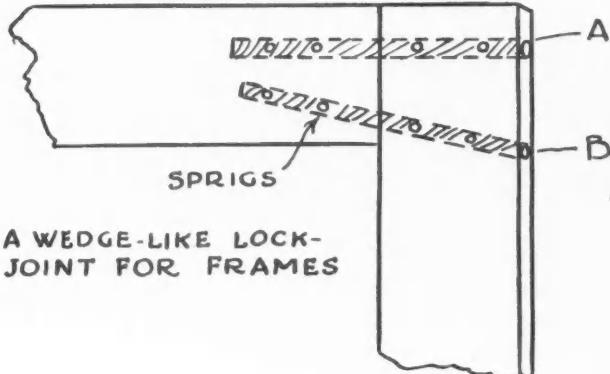
of the stop. Eight No. 10 1 1/4-inch screws hold the stop to the bench with firmness and insure a good grip on the work. These screws should be deeply countersunk.

In case the bench top cannot be slotted, the spring and screw eye (not hook and washer, as here) can be pocketed under the block C, in which case the block will have to be about 3/4 inch wider than here shown. This pocket is cut 1/2 inch deep, and in the drawing is located by the dotted lines qp and rs. In closed position the spring is located by the dotted line vw; p and r are 2 inches apart, and are placed midway along the wedge line (HK); s is 1/4 inch from the corner and q is 1/2 inch from s.

The ever-ready helps and does not annoy, so it saves the workman's time and temper—two items worth saving.—RUDY SENGER, Goshen, Ind.

Doweling Screen Frames

THE sketch shows a good method for doweling frames together, such as screen frames, screen doors and casement frames. The dowel "A" is bored straight in while the dowel "B" is at an angle of 20 degrees. When bored in this way the dowels form a wedge-shaped joint, making a frame which cannot pull apart or sag. Additional assurance is provided by the small sprigs, or brads, driven through the dowels.—Philadelphia, Pa.



Rigid Joints Which Will Not Sag or Pull Apart Can Be Assured for Frames Such as Screens and Casements by Dowelling Them as Shown.

What is it worth to be certain when you remodel or build?

What is it worth to avoid sore disappointments—defects discovered too late to be corrected except at great expense?

What is the real cause of these faults supposedly due to poor construction? *Carelessness in selecting materials!* Failure to insist upon products of *known* reputation, *known* value, *known* dependability.

Experienced home owners and builders don't guess. They test and compare—and then select their materials.

When you build or remodel, investigate Beaver Products for walls, for roofs. Test and compare them. Satisfy yourself thoroughly on every point of their superiority. See why they build walls that are more beautiful and enduring—roofs that stay sealed and retain their beauty.

For really satisfactory remodeling, and many miscellaneous uses, select

Beaver Fibre Wall Board

You know this famous product. It has *earned* the position of leadership it maintains among fibre wall boards. Test it for greater durability and strength. See how much easier it takes decoration. Compare it as an insulator against heat, cold and sound. You can easily identify genuine Beaver Wall Board by the Red Beaver Border on every panel. Send for sample and literature. Address Dept. 1803.

THE BEAVER PRODUCTS CO., Inc.

Buffalo, N. Y.

Thorold, Ontario, Canada

London, England

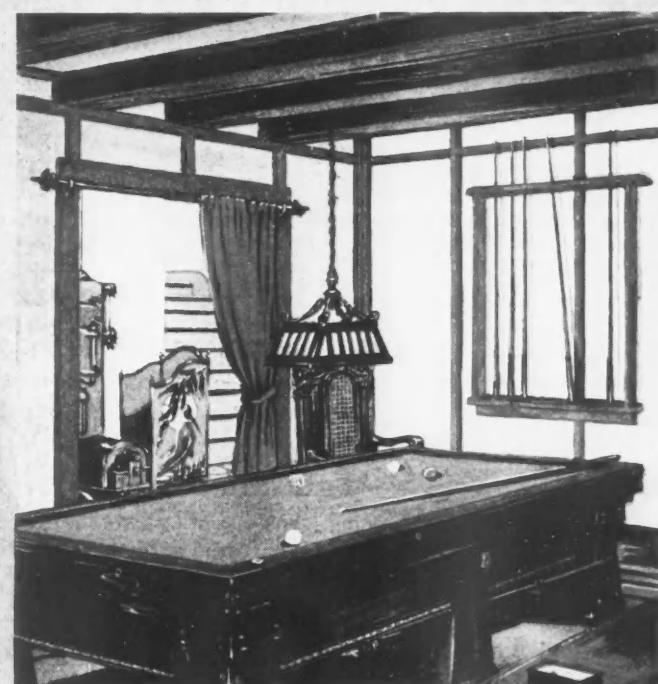
"Consult the BEAVER PRODUCTS DEALER
in Your Town!"

For ROOFS

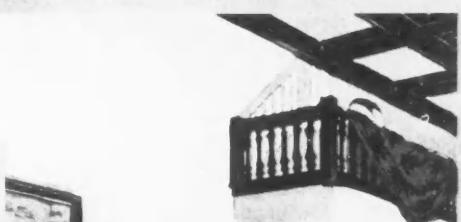


BEAVER VULCANITE SELF-SPACING SHINGLES SEAL THE ROOF
AGAINST SEVEREST WEATHER

For WALLS



For WALLS



BEAVER FIBRE WALL BOARD
MAKES WASTE SPACE USEFUL



BEAVER BESTWALL BUILDS MORE BEAUTIFUL AND DURABLE
WALLS THAN ORDINARY PLASTER WALL BOARDS

for WALLS

Bestwall
Plaster Wall Board
Beaver Fibre Wall Board
Beaver American Plaster
Beaver Gypsum Lath
Beaver Gypsum Block
Beaver
Varnishes and Enamels

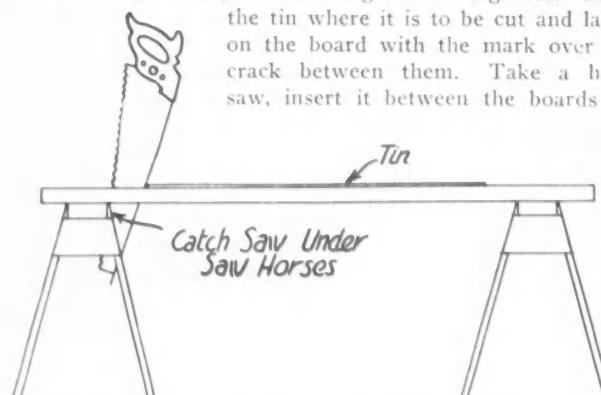
for ROOFS

Beaver Vulcanite
Hexagon Slab Shingles
Beaver Vulcanite
Self-Spacing Shingles
Beaver Vulcanite
Slate and Smooth
Surfaced
Roll Roofings
Beaver Vulcanite
Built-to-order Roofs
Beaver Vulcanite
Roofs Paints
and Cements

BEAVER
PRODUCTS
PLASTERS - WALL BOARDS - ROOFINGS

Cutting Tin Without Snips

HERE is an "emergency idea" which is of use when there is no tin snip on the job. Take two boards and place them on saw horses, with the edges close together. Mark the tin where it is to be cut and lay it on the board with the mark over the crack between them. Take a hand saw, insert it between the boards up



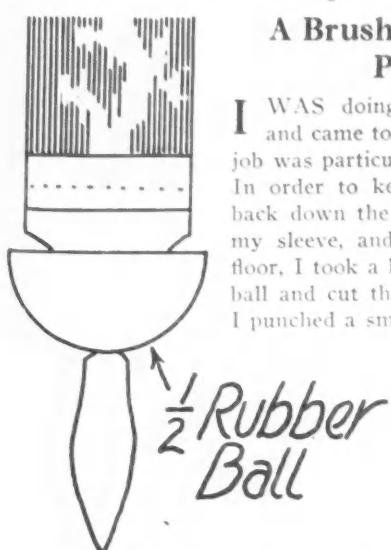
Sometime You May Need to Cut Tin Unexpectedly and Not Have the Tin Snips Along. This shows you how to do it.

against the saw horse and with the back to the tin. Hold the tin firmly in place and pull down on the saw. This will cut the tin along the line of the crack between the boards.—H. E. SHELLEY, Coquille, Ore.

A Brush for Overhead Painting

I WAS doing some painting work, and came to the overhead part. The job was particular, and hard to handle. In order to keep paint from running back down the paint brush, and down my sleeve, and from dripping on the floor, I took a large size hollow rubber ball and cut this into two equal parts. I punched a small hole in the center of

one half of the ball, and forced the brush handle through this hole so that it would fit tightly. The cup part of the ball was turned to the brush, so when I painted overhead this cup caught all paint that dripped.—CHAS. N. TUNNELL, Tahoka, Texas.



An Unusual Use of a Rubber Ball but Mighty Handy for Overhead Paint Jobs.

Removing Scaled Tint

WHEN several coats of tint are applied to walls it often happens that the outside coat scales off. When the walls have a sand finish plaster it is almost impossible to remove the scale by ordinary means, so that a fresh coat may be applied successfully. Here is a method which will get around the difficulty, however.

Take a piece of two by four about six or eight inches long and a number of crown corks, such as are used on bottled beverages, place the tops of the corks against the two by four and drive a roofing nail through the center of each cork. The corks should be placed close together in rows.

When this tool is ready, take a large brush and moisten the walls thoroughly two or three times and then use the tool as a scraper. I found this method would work when nothing else in the way of a scraper brush or knife would remove the tint.—L. C. BURTON, Pasadena, Calif.

Protecting Blue Prints

I AM sending a sample of the method I use to keep our company's blue prints from frazzling and tearing at the edges. I believe the method adopted by most construction companies is to paste cloth on the backs of the blue prints, but my method is less work and thoroughly protects the edges where tears would otherwise start.

I use ordinary glued tape, such as is commonly used in stores, in place of string, in wrapping bundles. I simply double this and paste it onto the blue print as a binding for the edges.—KATHLEEN M. LEISHMAN, Birmingham, Mich.

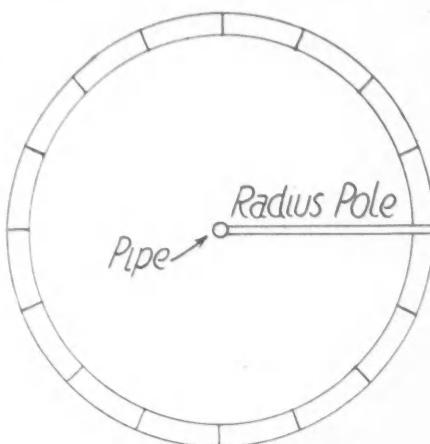


Another Use of Glued Paper Tape Has Been Found. Binding the edges of blue prints keeps them from tearing.

Plumbing Circular Tank

NOT long ago I built a round supply tank, 15 feet deep, of 8 by 8 by 24-inch cement block. The method I used to get away from using a level on each block and still keep the circle true and plumb may be of interest.

I took a 1-inch gas pipe 20 feet long and fastened it upright and plumb in the center of the tank, holding it by means of four guy wires. I then took a strip of wood 1 inch square and $7\frac{1}{2}$ feet long and fastened one end to the pipe, in such a way that it could be swung around the pipe. I used this as a radius pole. Each time I laid a layer of block I raised the pole 8 inches on the gas pipe by means of a string reaching from the top of the pipe. A. A. MOYER, Lockwood, Iowa.

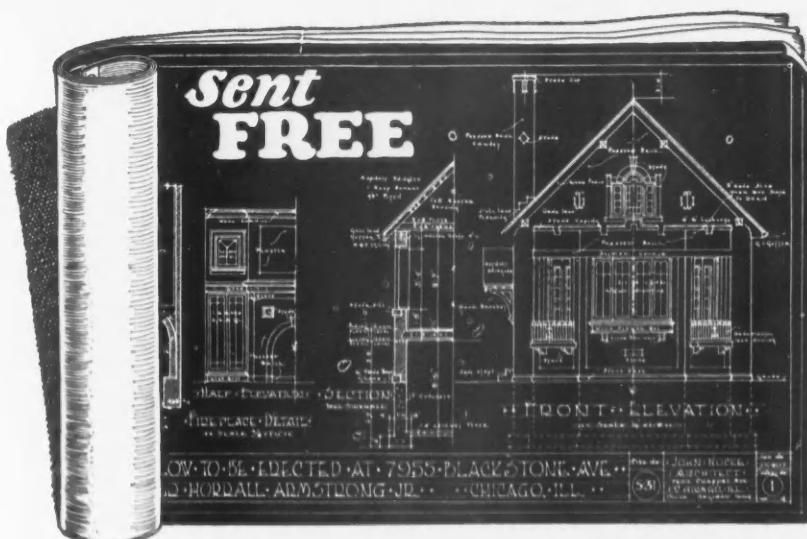


Here Is the Way the Tank Would Look from Above, Using This Method of Plumbing the Concrete Block Walls.

Tamper for Setting Posts

AN unusually convenient and adaptable tamper for tamping earth around posts can easily be constructed in the following manner:

Get a piece of $1\frac{1}{4}$ -inch pipe about 30 inches long and an old shovel or fork handle about the same length. Drive this handle into the pipe about 6 or 8 inches. When this is done start tamping. The balance of the pipe will fill solidly with earth and gravel in a few minutes. This gives it the required weight and makes a tamper of ideal size, shape and weight for tamping effectively and without undue fatigue.—A. J. H., Mont.



You Can Become a Building Expert

Plan Reading. Every man who has got very far ahead in any building trade can read blue prints. No man can expect to be a first rate foreman or superintendent until he knows what every line on a plan means and how to lay out and direct work from the architect's plans. By the Chicago Tech. Method you quickly learn to read any plan as easily as you read these words.

Estimating. Of course a man who wants to be a contractor or to hold a big job in a contracting organization must know how to figure costs of labor, material, and everything else that goes into any kind of building. The Chicago Tech. Course covers every detail of this important branch—shows you just how it is done from actual blue print plans.

Superintending. How to hire and direct men, how to keep track of every detail of construction as it goes on, how to get the work done in the least time at the lowest cost is also fully covered in the Chicago Tech. Builders' Course.

Also special courses in Architectural Drafting for builders, taught by practical men. These explained in Special Catalog "D" sent on request.

CHICAGO TECHNICAL SCHOOL FOR BUILDERS

Dept. 336, Chicago Tech. Building, 118 E. 26th St., Chicago, Ill.

Mail the coupon for Blue Print Plans and 24-page Book: "How to Read Blue Prints"

Blue Prints are interesting to every man in the building trades. And more! They are the key to every builder's success. For until you can read and understand blue prints you will probably have to be satisfied with only a scale wage. The man who can read blue prints can become foreman, superintendent, or have a business of his own. To help every man who really wants to make money and get ahead in building, Chicago Technical School for Builders offers absolutely *free* these Blue Print Plans and a 24-page book "How to Read Blue Prints."

What this book is

This book is written by an expert . . . a practical builder who knows the game from top to bottom. It tells how different materials are shown on blue prints, how "sections" and "elevations" are shown on plans, how to lay out a building from a plan, how to take off quantities . . . and all the other interesting and important facts regarding blue prints. The book is as easy to read as your newspaper . . . written in plain, everyday English that everyone can understand. "How to Read Blue Prints" will be mighty helpful to you. Aside from the real help it gives you it will show you how clear and plain and easy the Chicago Technical Builders Course is . . . how quickly you can learn in your spare time . . . at home . . . to become a building expert.

Learn at Home to make more money

For 20 years the Chicago Tech. School for Builders has been training men to advance and make more money in building. Hundreds of successful men, superintendents

and contractors, owe their success to their Chicago Tech. training. We train you by mail . . . in your spare time . . . at home.

Send the Coupon... Now

With the free Blue Print Plans and our book "How to Read Blue Prints" we will send you another book . . . also sent absolutely *free*. It tells all about the Chicago Tech. Builders course . . . directed by practical building experts . . . tells what others say this course has done for them . . . shows pictures and gives all the facts about our method of training men . . . quickly . . . for the jobs that pay most money. This may be your golden opportunity. It costs you nothing to find out all about it. So send the coupon in now . . . for the free plans and books.

Mail the Coupon—NOW

CHICAGO TECHNICAL SCHOOL FOR BUILDERS

Dept. 336, Chicago Tech. Bldg.,
118 East 26th St., Chicago, Ill.

Please send me without obligation your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below. It is understood that no salesman will call on me.

[Write or print name plainly]

Name

Address

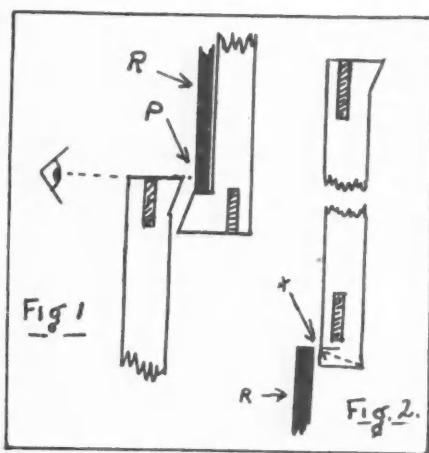
City

State

Fitting Windows

TO hang windows so that check-rails will match accurately, it is a simple operation, although it may seem difficult to the amateur.

First fit the top sash and fasten it in place, being sure that it is up snug at the top. Set bottom sash in proper position. Place end of rule R on rail of top sash as per diagram, Fig. 1. Sight across rail of bottom sash and the figure or fraction on rule as seen at P will be the amount to be cut off. Measure this distance from bottom end of sash and mark as per X in the drawing. Bevel from this mark as shown at

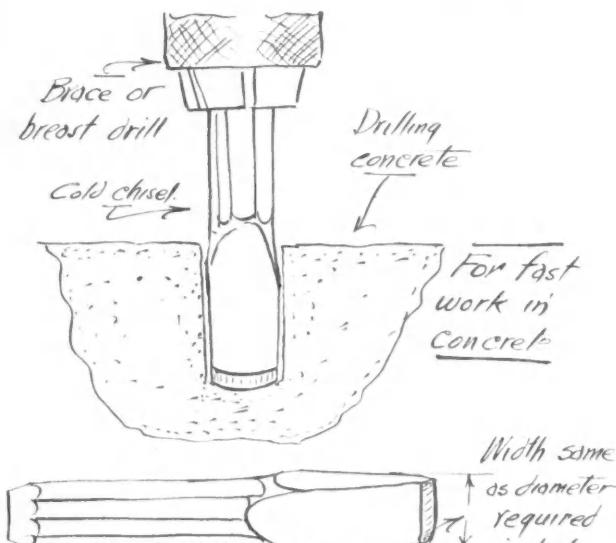


Here Is a Method of Hanging Window Sash so That the Check Rails Match Accurately. It is a simple operation.

dotted line to fit slope of sill. This method gives a perfect fit, both at check rails and at window sill.—E. J. WILSON, Gary, Ind.

Chisel Drills Slate and Concrete

SOME few months ago, the workmen in remodeling a house found among other details of work that it was necessary to drill a slate mantel for the addition of secur-



The type of cold chisel used as drill for concrete, slate or soft grades of marble.

A Small Cold Chisel, Used as Shown, Was Found to Be a Most Satisfactory Tool for Drilling Slate and Concrete.

ing bolts to hold the several sections which had been broken. After use of various forms of drills, with indifferent results, a method which finally gave results was that of the use of a small cold chisel as a drill. This simple and apparently crude drill not only accomplished the work of drilling the

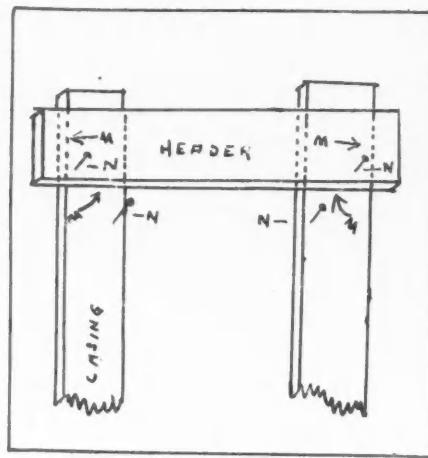
holes, but it also did the work with the least of effort and in the quickest time.

Acting on the results obtained in this first instance, a chisel later was used to penetrate a concrete floor for the insertion of a drain pipe. The use of a chisel proved to be, in concrete, better than any other form of drill also. Since that time for all work of drilling slate, marble and concrete the same type of drill, cold chisel, has been used and the results are such that it is probable for any of this work that a better form of drill could not be suggested or recommended.—G. F. LUERS, 122 E. Capitol Street, Washington, D. C.

A Trimming Trick

IN casing up doors and windows, especially on old work or remodeling jobs, the door or window frame may be slightly out of square, so that if side casing is simply sawed off to a square mark at the top, the header piece will fail to fit properly.

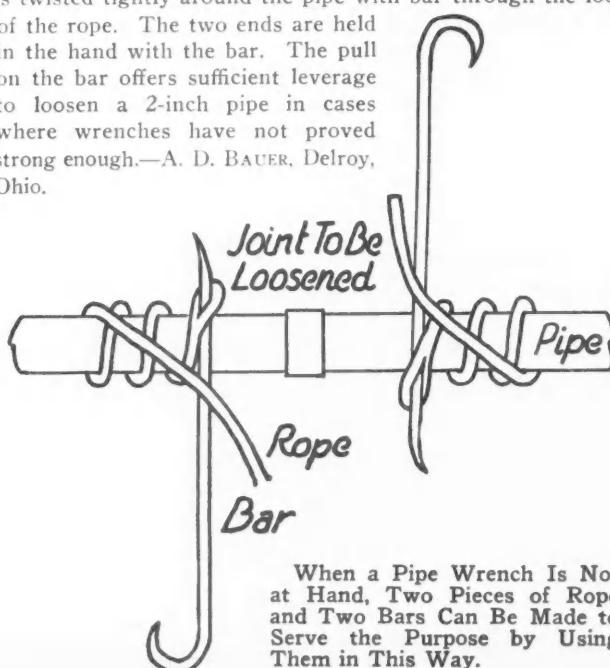
To avoid this, cut your casing an inch or two longer than needed and tack into position on edge of jamb. Place header across top where wanted and tack at N, N. Both casing and header can then be marked and cut off as at M, thus insuring neat fitting joints.—E. J. WILSON, Gary, Ind.



This Is the Way to Make Sure That a Door or Window Casing Will Fit Properly Even if Out of Square.

Rope Pipe Wrench

WE carpenters often come across work on a gas or water line when we have no pipe wrench and unless a good substitute is known we are up against it. A substitute for a pipe wrench, which will serve very satisfactorily in such an emergency, can be made from a piece of rope. The rope is twisted tightly around the pipe with bar through the loop of the rope. The two ends are held in the hand with the bar. The pull on the bar offers sufficient leverage to loosen a 2-inch pipe in cases where wrenches have not proved strong enough.—A. D. BAUER, Delroy, Ohio.



When a Pipe Wrench Is Not at Hand, Two Pieces of Rope and Two Bars Can Be Made to Serve the Purpose by Using Them in This Way.

Ruberoid roofs indicated in red



Four Out of Five Have Ruberoid Roofs

INDIAN LAKE is an exclusive summer resort in New Jersey containing over five hundred homes. Ninety-five per cent. of these homes are roofed with Ruberoid Octab Strip-shingles. The reason for the predominance of Octabs is given in the letter from The Arthur D. Crane Co., who developed the community, which is reproduced at the right.

The same reasons would undoubtedly apply in connection with many of your building and re-roofing jobs. Near you is a lumber or building supply dealer who sells Ruberoid Shingles and Roofings. Ask him about them or use the coupon below.

The RUBEROID Co.

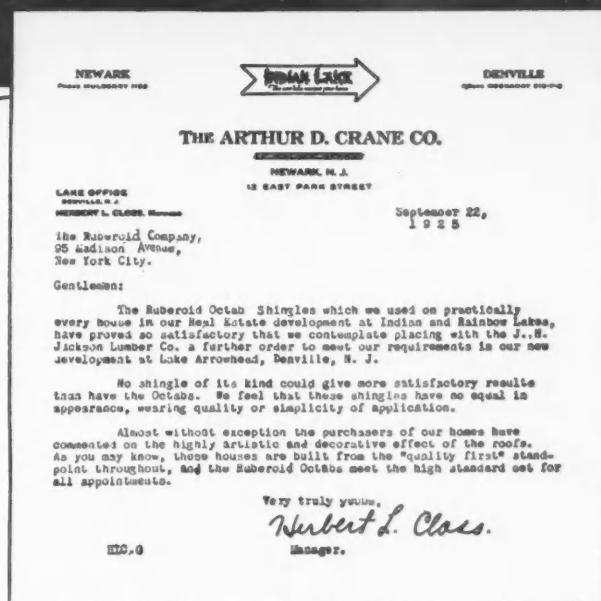
Chicago

New York

Boston

RU-BER-OID

SHINGLES • ROOFING

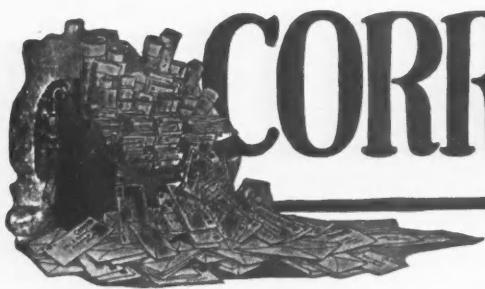


The RUBEROID Co., Dept. 1
95 Madison Ave., New York.
Gentlemen: Please send me information regarding the Ruberoid Products checked below.

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CORRESPONDENCE

How Should He Frame It?

To the Editor: Berkeley, California.

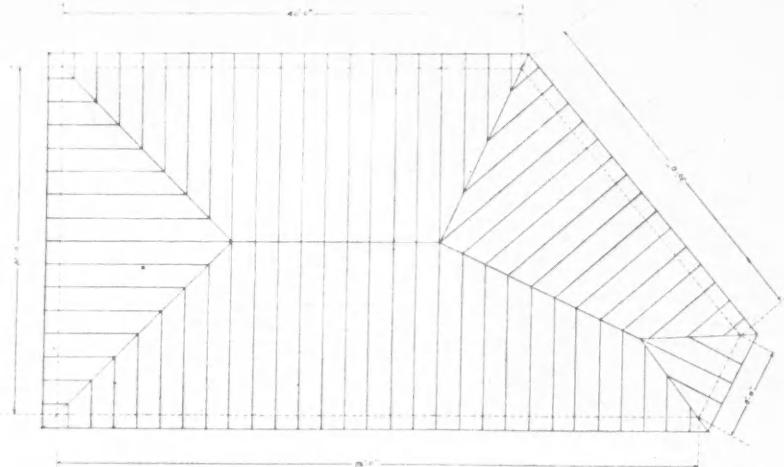
I enclose a drawing of the roof plan of an irregular shaped roof which I built a short time ago. The design called for a hip roof but the designing and framing was left to me to handle on the job. I have framed many irregular shaped roofs on square angled buildings without difficulty but I had to think twice and again before I could make up my mind how to frame this one.

Perhaps this was because of the many suggestions from the carpenters on the job as to how it should be framed. One of these was that the hips must all be of the same length, which was impossible; another that the two hip rafters from the eight-foot side should run to the ridge, which did not seem practical. I came to the conclusion that the hips should run through the bisection of the angles.

The long hip rafter running to the eight-foot side I framed out of a 2 by 6 long enough to continue through the intersection of the short hips and to rest on the plate. But when placed in that position I found that it was low in the center. Then I cut the long hip off at the intersection of the short hips and raised it up to the plane line of the common rafters on the side and it came out in good shape.

I would be pleased if you could find space in your magazine to illustrate the correct method for framing a

Questions Answered—Ideas Exchanged



Here Is the Way in Which the Problem of Framing an Irregular Shaped Roof Was Solved. Can anyone suggest a better way to frame it?

roof like this and would appreciate any information you may be able to give me on the subject.—F. S. Holtz.



Remodeling a Church

To the Editor:

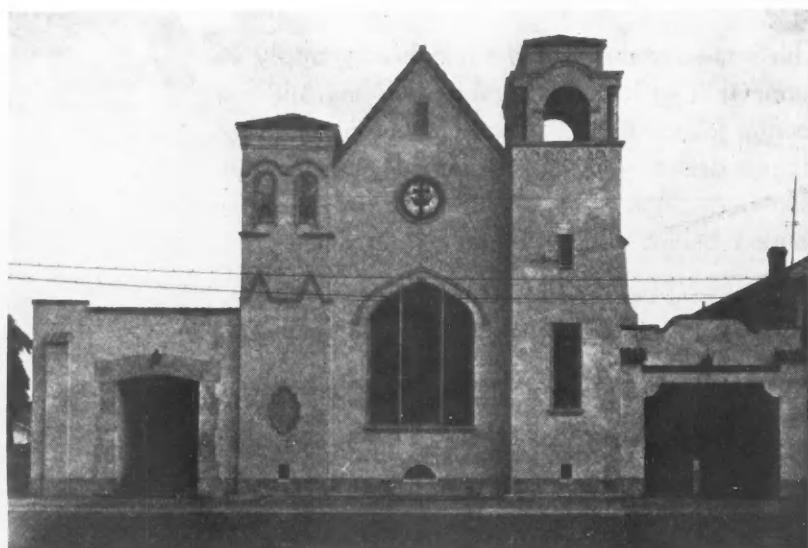
Watsonville, Cal.

I am enclosing photographs of the remodeling job done on the First Presbyterian Church of this city. The smaller one shows the old church as it looked when we began wrecking the towers. The main structure was not changed but we added two wings for entrances. The one on the right leads back to the Sunday school auditorium and class rooms while the one at the left leads to the church auditorium. I would be glad to have you publish these if you care to use them.

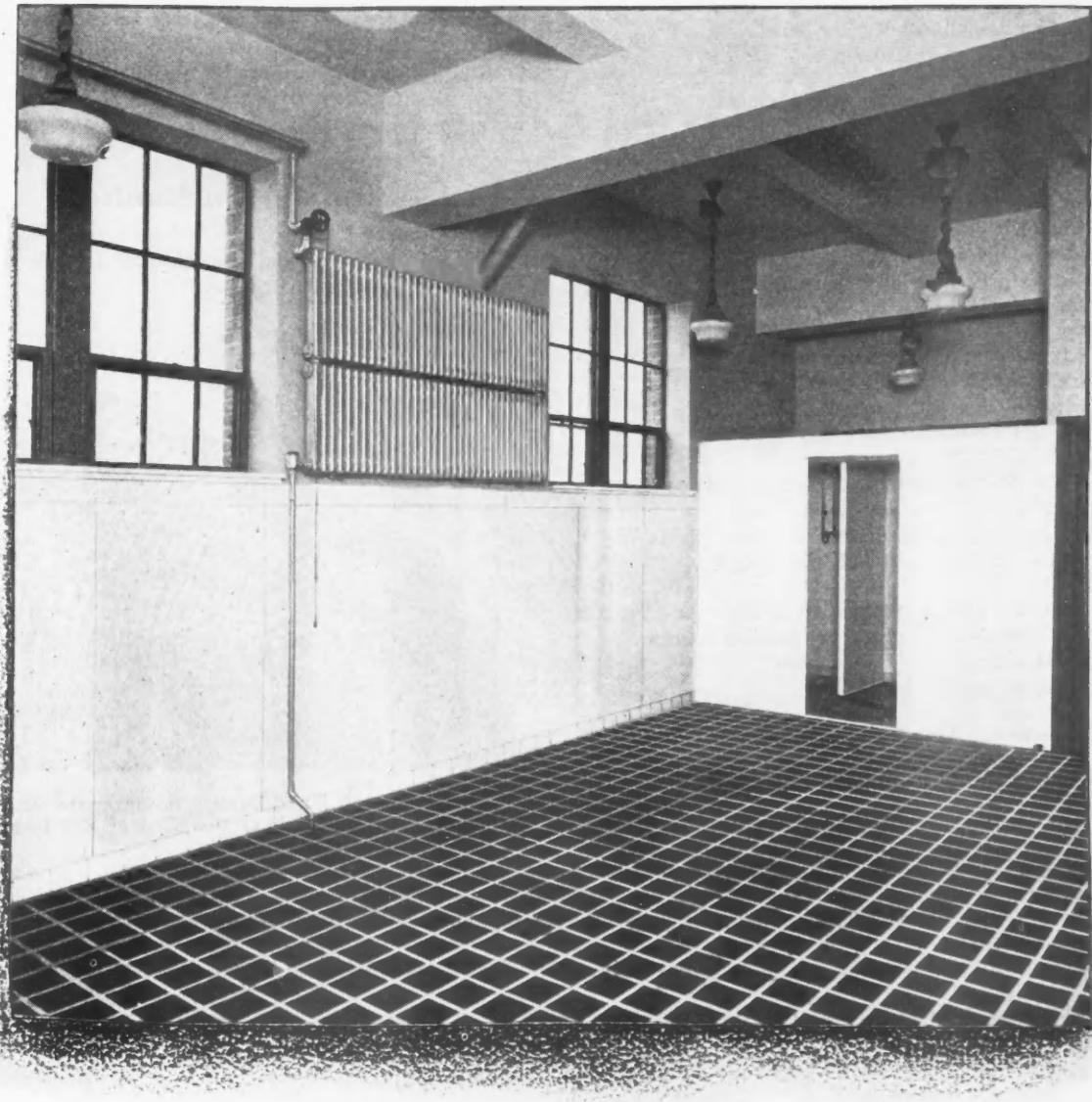
A. W. STORY.



The Old First Presbyterian Church of Watsonville, California, Which Was Remodeled Into a More Attractive Building.



This Is How the Old Church at the Left Appeared After It Had Been Remodeled and Two Wings Added. The main structure was not changed except for the outside finish.



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INSTRUCTIONS IN ROOF FRAMING

This Department Appears Every Month in American Builder

Laying Off the Rafter Cuts

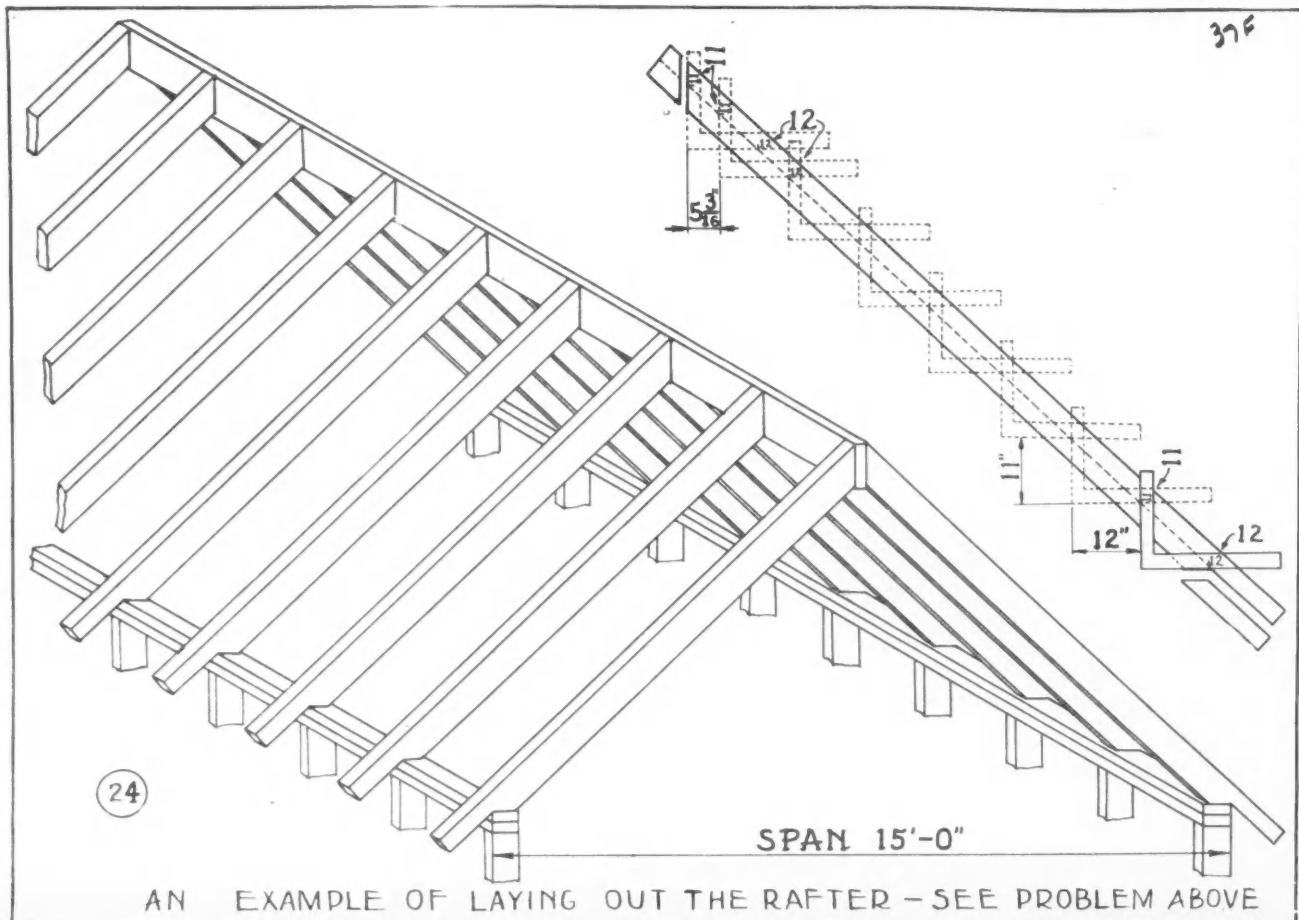
By JOHN T. NEUFELD

Problems

1. What is the pitch of the rafter in Fig. 25?
2. What is the total rise of the rafter in Fig. 27?
3. From the information given in Fig. 28 make up a rule for laying out the top and seat cut of a common rafter.
4. What is the total rise of the rafter in Fig. 29?
5. In Fig. 30 the numbers 10 and 12 are used to lay off the seat cut of the rafter. What numbers would be used if the rafter was one-quarter pitch?
6. If a roof had a span of 32 feet, how many times would the square be applied to get the length of the rafter, using the method illustrated in Fig. 31?
7. What is the total rise of the roof in Fig. 24?
8. What is the pitch of the roof in Fig. 24?
9. What is the rise per foot run of a roof with a span of 18 feet and a rise of 7 feet 6 inches?
10. If this rafter was to be laid out by stepping off with the square, what numbers would be used on the square and how many times would it be applied?

Answers

1. The pitch of the rafter in Fig. 25 is $8/24$ = one-third pitch.
2. The rise per foot run of the rafter in Fig. 27 is 8 inches. The total rise is 4×8 inches = 32 inches = 2 feet 8 inches.
3. The top and seat cut of a common rafter may be found by taking the rise per foot run in inches on one arm of the square and 12 inches on the other arm.
4. The rise per foot run of the rafter in Fig. 29 is 10 inches. The total rise is 6.77 (6 feet $8\frac{3}{4}$ inches) \times 10 inches = 67.7 inches = 5 feet $7\frac{11}{16}$ inches.
5. For a one-quarter pitch the rise is one-quarter of the span or one-half of the run, therefore the rise is 6 inches per foot of run and the numbers used on the steel square to lay off the seat cut would be 6 inches and 12 inches.
6. If the span of a roof is 32 feet then the square must be applied 16 times to obtain the length of the rafter.
7. The roof in Fig. 24 has a rise per foot run of 11 inches.





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THE home buyer is becoming educated to the value of permanent materials. The builder is sensing this condition, and is meeting this growing demand by building with Brick.

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Portland, Ore.	906 Lewis Bldg.
Salt Lake City	301 Atlas Bldg.
San Francisco	932 Monadnock Bldg.
Seattle, Wash.	913 Arctic Bldg.
Springfield, Mass.	301 Tarbell-Watters Bldg.

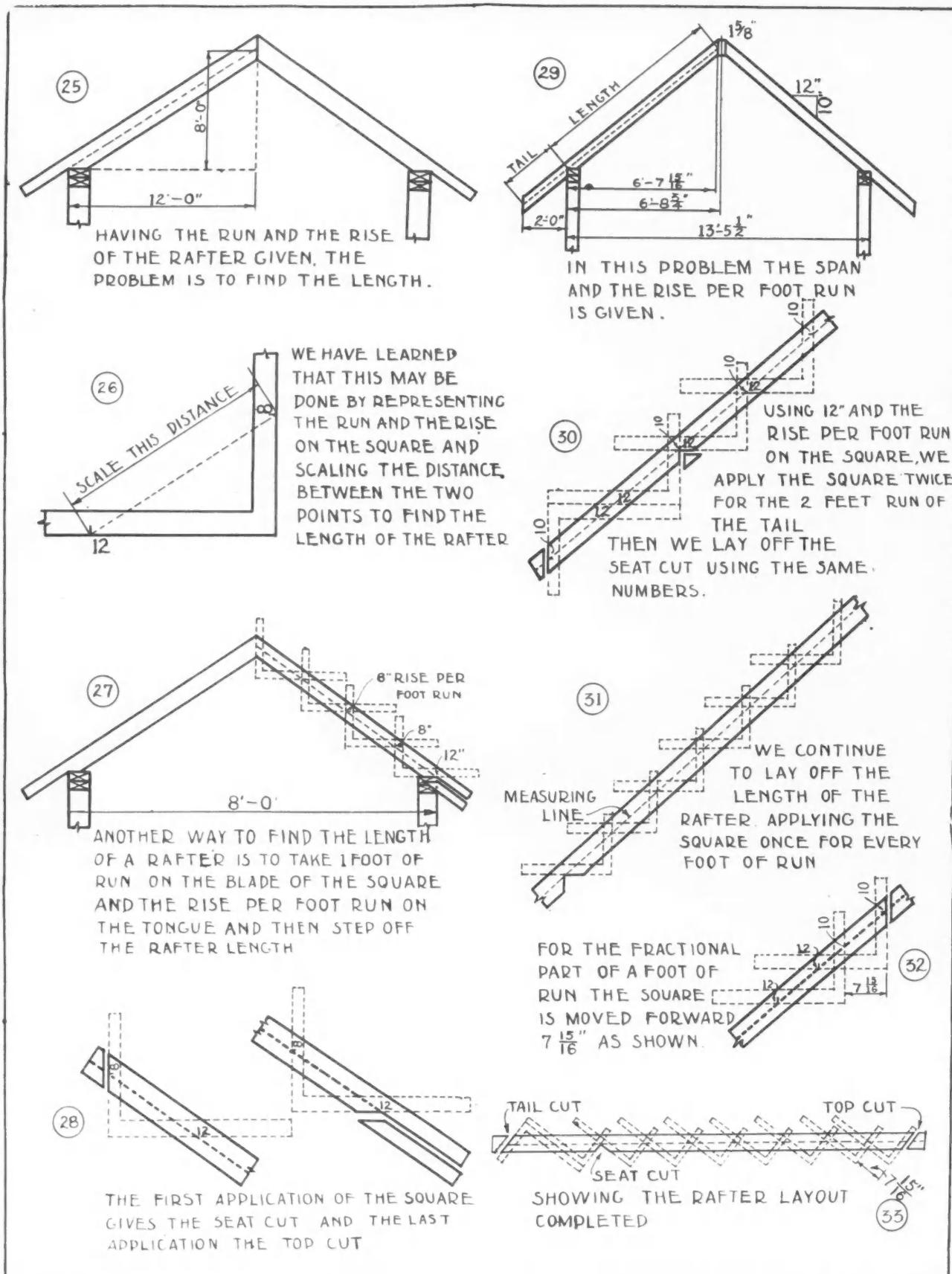


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Check above and send money or stamps for any or all of these books. Write plainly your name and address on the margin of this coupon.

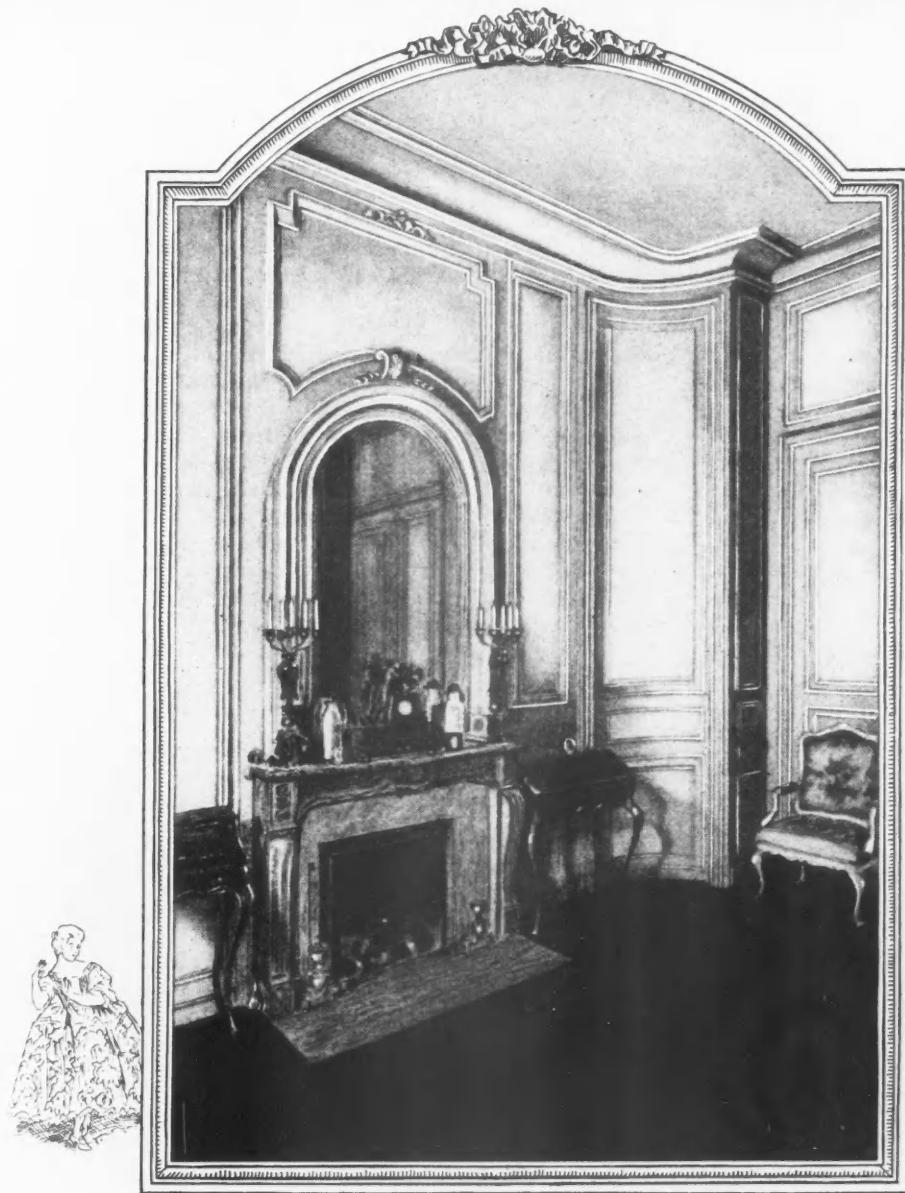


The total rise is 7.5×11 inches = 82.5 inches = 6 feet $10\frac{1}{2}$ inches.

8. The rafter in Fig. 24 has a 11-inch rise per foot run. This makes 11 inches for every 2 feet of span, as there are always 2 feet of span for 1 foot of run in an even pitched roof. As the pitch is expressed by the ratio of the rise to the span we may express this pitch as 11/24.

9. If the total rise is 7 feet 6 inches = 90 inches for a span of 18 feet or a run of 9 feet, then the rise per foot run is $90 \div 9 = 10$ inches.

10. To lay out the rafter for problem nine use 10 inches on the tongue of the square and 12 inches on the blade apply the square nine times.



French Fashions in the Eighteenth Century

The creation of the style of Louis XVI is credited to two architects of that period—Jean Nicholas Servandoni and Jacques Germain Soufflot—citizens of Lyons. Their work was characterized by enthusiasm for the ancient art of Italy. Due to their influence, French art in plastering was expressed by simple dignity of design, absence of affectation and wider use of the more formal smooth plaster-paneled walls, ceilings, and cornices.



No home is too small to justify genuine plastering.

The fallacy that renderings in lime are expensive has been entirely eliminated. Home building America now appreciates the economy of genuine plastering—which for years many considered suitable only to the palatial.

Simple, antique textured surfaces, cornices, panels, beams, arches, stone effects and ceilings—make distinctive and attractive interiors. The plasterer, too, is much more interested in the job that gives expression to his art.

Builders have learned that *Tiger Finish* "Spreads like warm butter"—giving large covering capacity and the assurance of perfect plastering. Also the sound-absorbing qualities which only lime can give.

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"SPREADS LIKE WARM BUTTER"

Blasting Concrete Foundations

By N. D. RAND

IN excavating for the erection of a new building, concrete foundations of old buildings may need to be removed. This is accomplished quickly and inexpensively with charges of dynamite, and need not in any way endanger adjacent buildings or foundations.

The charges should be reduced to a minimum and spaced close together. Whether it is a concrete or brick foundation or an engine bed that is to be removed, the object sought is to crack it up into pieces small enough to handle conveniently and without throwing the material. If there are objects nearby likely to be damaged, a blasting mat can be used very effectively for protection from flying pieces. In the absence of a blasting mat, heavy lumber, railroad ties or logs may be piled against the concrete.

To remove a concrete wall, drill holes near the bottom of the wall to a depth of about three-quarters the thickness of the wall and from three to five feet apart. Remove the dynamite from the paper wrapper and pack tightly into the bore hole, using from one-half to one cartridge of low freezing extra 40 per cent to 20 per cent dynamite.

The distance between the bore holes and the charge placed in each hole will depend upon four factors, the thickness of

the wall, the diameter of the bore hole, the kind of dynamite used and proximity of objects likely to be damaged. For holes spaced closer than three feet apart the charge may be reduced to two-thirds or one-third of a cartridge.

A "rule of thumb" formula giving fairly good results is to use a half cartridge of low freezing extra 40 per cent dynamite for every cubic yard of concrete and one-half of this amount for brick. The charges must be well tamped with clay, and fired simultaneously with a machine.

With bridge abutments and piers the charges may be heavier in order to blow the material out of the way.

Reinforced concrete is the most difficult of all to blast. Very thick walls and very heavy foundations are blasted away by small sections at a time, especially if near property which is liable to be damaged.

With power drills, 1½-inch drill steel is the most convenient size to use as it enables the placing of the dynamite in the hole without removing the cartridge paper wrapping. With hand drill, by jumper steel and sledge, the most convenient size is one inch or one and a quarter inch, and with a hand hammer, one man drilling, drill steel 3/4-inch to one inch should be used.



By the Use of Minimum Charges, Spaced Close Together, a Foundation May Be Blasted Without Danger to Adjacent Buildings.



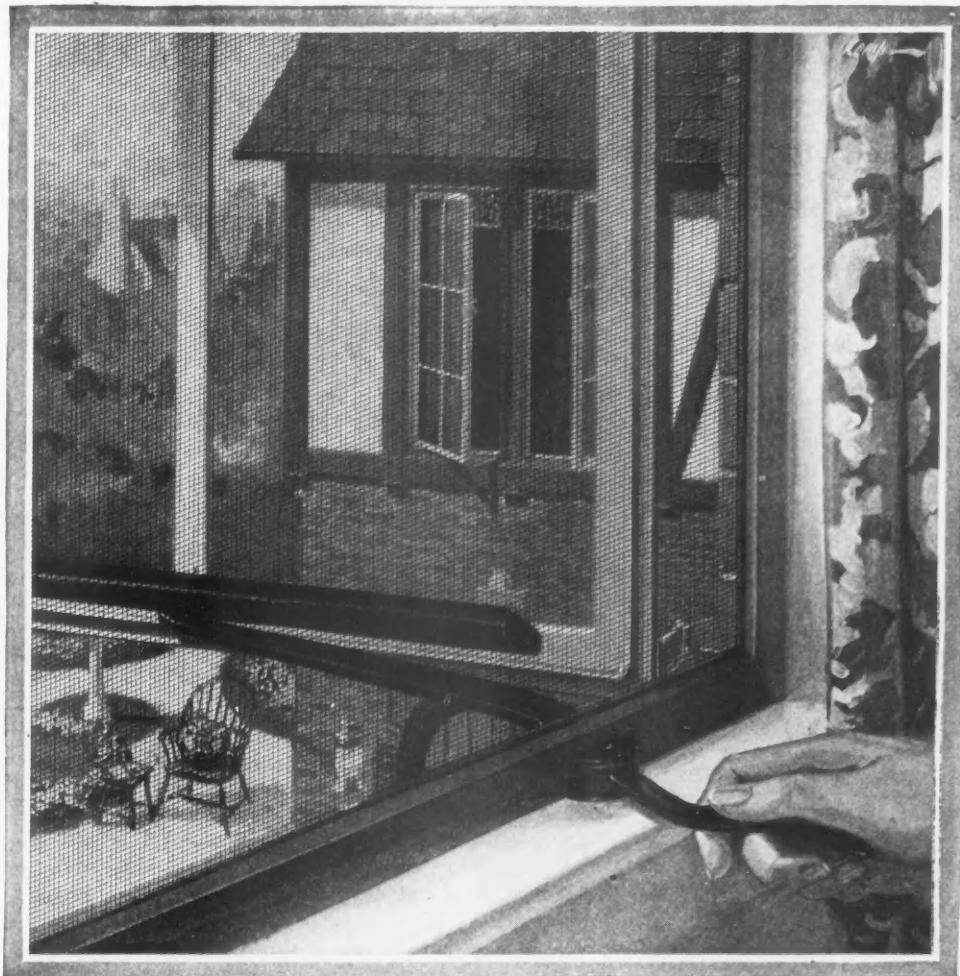
If an Engine Bed or Similar Foundation Is to Be Removed the Holes May Be Drilled Vertically and the Charges Fired One at a Time with Cap and Fuse.



Woven Wire Fencing Will Serve as a Blasting Mat to Protect Nearby Objects Which Might Be Injured by Flying Pieces of Concrete.



In the Absence of a Blasting Mat, Heavy Lumber, Railroad Ties, or Logs May Be Piled Against the Concrete to Prevent the Throwing of Material.



Each item of Casement Hardware made by us is designed to accomplish, better than ever before, a definite end. Each piece complements every other piece, so that a casement fitted with a Win-Dor Operator (or Automatic Stay) a Bolt-Fast and set of Screen Fasteners, is the most up-to-date and satisfactorily equipped window that it is possible to install. It will assure the utmost satisfaction of your clients to specify this special-purpose, special-design hardware.

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For, unlike most of the conveniences which you build into your structures, Win-Dor Casement Hardware gives you selling points of proved worth without stretching the estimate in any way.

The Win-Dor line now includes both a Surface and a Flush Type Casement Operator (the former shown above) which are equally suited to use with a wood or metal casement; an Automatic Locking Stay that can be

operated with one hand; a new and exceptionally strong "Bolt Fast" with cam-action closing feature; very inexpensive Screen Hardware that does away with the necessity of hinging screens or even moving them when this hardware is used together with a Win-Dor Operator.

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More "Elbow Room" in the House

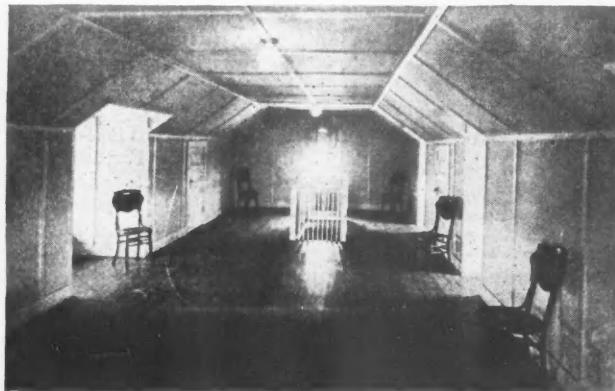
Innovations in Attic and Basement Add to the Desirability of a House

By GERTRUDE WOODCOCK

EXTRAS add to the desirability of a house. Anyone may have a living room, a bedroom, or dining room, or kitchen, but a home ball room, billiard room or play room for the youngsters, are supposedly reserved for the fortunate and few.

A house of modest price possessing one of these features becomes by virtue of it a thing above the common run. Yet so easily are additional rooms constructed, even in houses long since erected, that every one who boasts a home may enjoy it, plus special additions.

The third floor of the average house can be made into a "party room," for instance. All partitions should be torn out, a new floor laid and a plain, inexpensive fireplace built. Sheets of wall board can be nailed to the walls and ceiling and painted with flat wall paint. If all



Here Is an Attic Which Has Been Converted Into a Family Ballroom with Flooring, Wall Board and Paint.

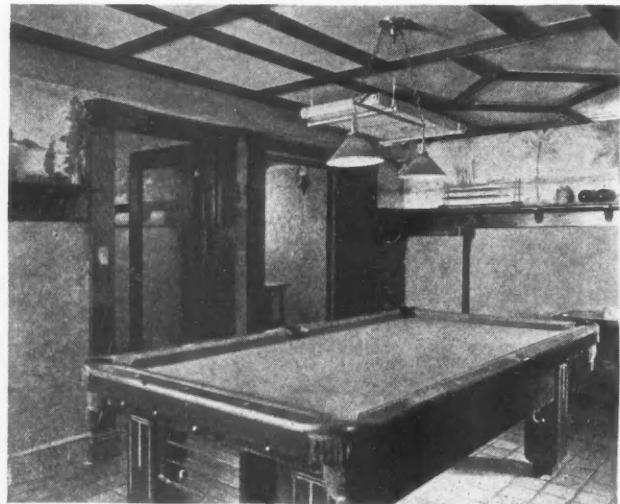
the woodwork is painted or varnished and the floor stained and varnished the attic will be converted into a practical, attractive dance hall where the children may entertain.

Remodeling the attic in this way practically saves its cost in fuel. Wall board is an insulator and will reduce the great loss of heat through the roof. The new floor, painted and varnished, will further stop warm air leaks.

The attic also provides for a large, unrestricted play room for the youngsters. Wall board and paint contrive to make the raftered "garret" a pleasant room for the children where they can indulge in their liveliest games without



A Bright, Clean, Attractive Play Room Can Be Made in the Attic with Wall Board. A private play room for the youngsters is decidedly attractive to the head of the family.



A Tasteful Use of Wall Board Panels, Paint and Varnish Results in an Excellent Basement Billiard Room.

fear of damaging the furniture.

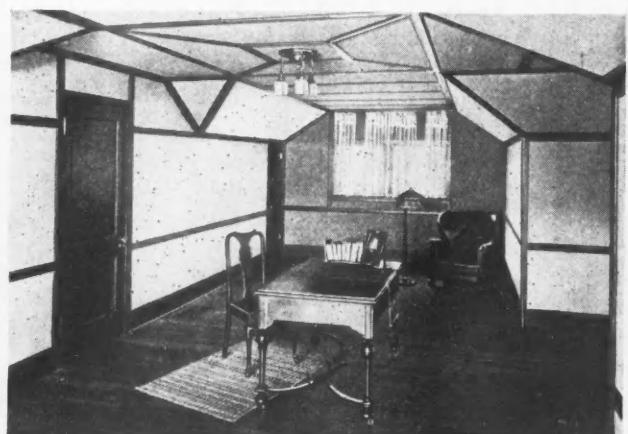
Extra bedrooms, work rooms, dens, and billiard rooms can be inexpensively constructed. What they add to the comfort, charm and desirability of a house can scarcely be estimated.

The attic, however, is not the only "waste space" which can be recalled to use. The basement—that portion usually held sacred to furnaces, laundries, and coal-bins—can be made over into an "additional room." Radio rooms and billiard rooms are basement favorites.

Wall board can be used to partition off a section of the cellar. Decoration is, of course, one of the principal problems in any basement remodeling. It may be solved by using the new plastic material that gives texture and tone. If the surface is glazed and sized it will be made washable. The cement floor should be painted, too, with special paints.

The builder who is awake to the possibilities of making "luxury" rooms out of "waste space" makes himself available for all sorts of innovations and renovations.

New houses, containing such rooms, become more desirable; old houses, when renovations of this sort have been introduced, find their value increased.



A Quiet "Home Work Room" for the Children or Reading Room for Their Elders Is Another Attic Innovation Which Many Householders Will Find Attractive.

Making New Homes Out of Old Houses

By JOHN A. WILSON

AN enterprising builder of Englewood, N. J., has built up a well paying business in remodeling old but well constructed and well preserved houses, thus making them easy to sell at a good price, when otherwise they would have to be disposed of for little more than the value of the land. There is a strong demand for large estates in Englewood, but the houses must be modern and there are very few of this description on the market, and too much capital would be required in this class of building to attract speculation.

The method of procedure is to have large photographs made of the principal elevations, and have these gone over by an artist, who paints in the proposed changes. When these are approved by the owner, working plans are drafted according to the picture and the contract is drawn with these as a basis.

It is seldom necessary to make radical changes to the interiors; tearing out a partition or two, adding extra baths and changing the heating method, being the usual demand, and of course redecorating inside and out.



This Old Residence in Englewood, N. J., Had Apparently Lost Its Value Beyond that of the Ground on Which It Stood Until an Enterprising Local Builder Took Charge and Subjected it to a Remodelling Along Modern Lines.

The accompanying photographs show what has been done toward giving one old residence a new lease of life.



A Few Changes in the Interior, Including Modern Heating Plant and Plumbing and Complete Redecoration, and the Exterior Changes Which Can Be Seen in the Photographs, Changed the Old House Into a Valuable and Easily Saleable Property, Meeting the Active Demand for Large Estates in Englewood.

Unusual Brick Ornamentation of a Spanish House

By CHARLES ALMA BYERS

THE little house of modified Spanish style shown in the accompanying illustration is delightfully unusual both in outside appearance and in interior arrangement. Viewing it from the outside, note particularly the hit or ornamentation of the front wall with brick, the brick-faced foundation and brick-framed front doorway, the door itself, with its great strap hinges and unusual paneling, and further, the prominently placed chimney, all details that combine to make the front uncommonly attractive.

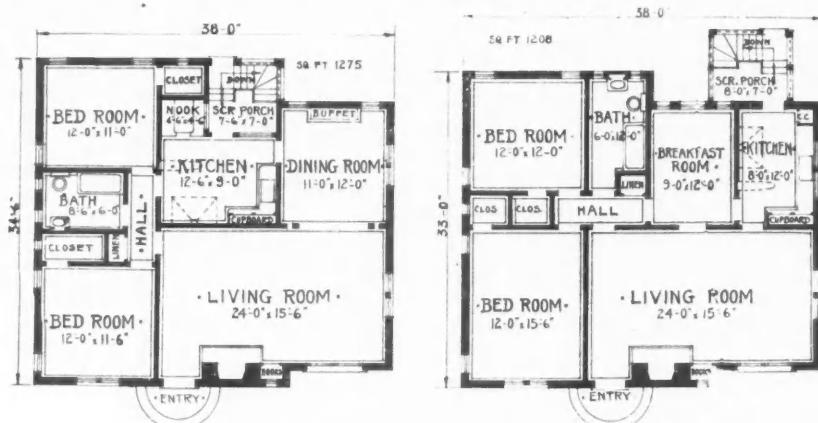
The color scheme of the exterior, as created by the different materials used in the construction and finish, is also worthy of note. The walls are deep cream stucco over metal lath and framework; the brick is of the so-called tapestry or rug kind in dark reds, browns and buff shades; the roof is of tile in a variegation of colors, and the wood trimming is done in white and gray. The foundation, although surfaced above the ground with brick, is of concrete, and the chimney is constructed of brick finished with stucco.

Included in the illustrations are two different floor plans for producing in the house the same general outside appearance. The one used in the construction of this particular house has a foundation area of 1,275 square feet, and contains living room, dining room, two bedrooms, bath room, kitchen and a small breakfast nook, besides the usual service porch in the rear.

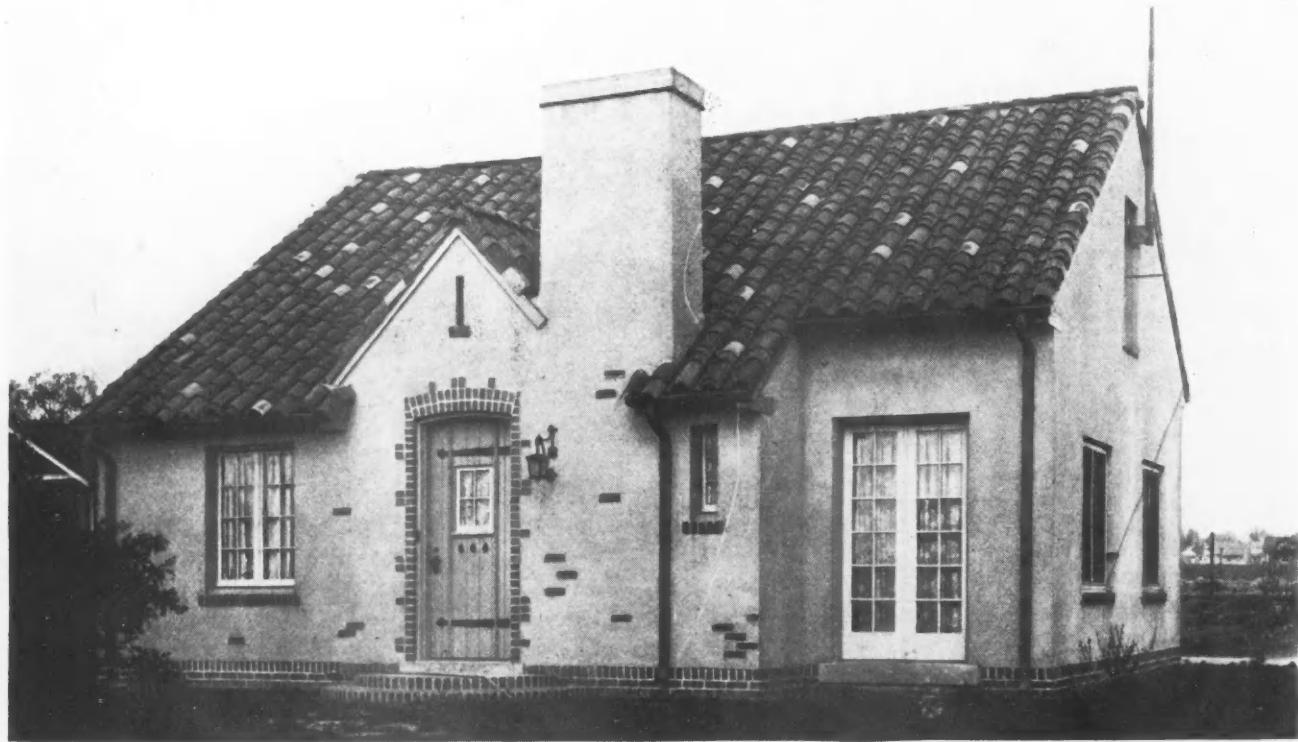
The other plan, with a floor area of 1,208 square feet, eliminates the ordinary dining room and provides a nine by twelve breakfast room instead.

The interior finish consists of pine woodwork in light French gray and plastered and painted walls in the living room and dining room, of pine in old ivory and plastered and papered walls in the bed rooms and hall, and of pine woodwork and plastered walls both finished in white enamel in the bath room and kitchen.

The house is built in Los Angeles, California, and the plans are by Floyd A. Dernier, of that city.

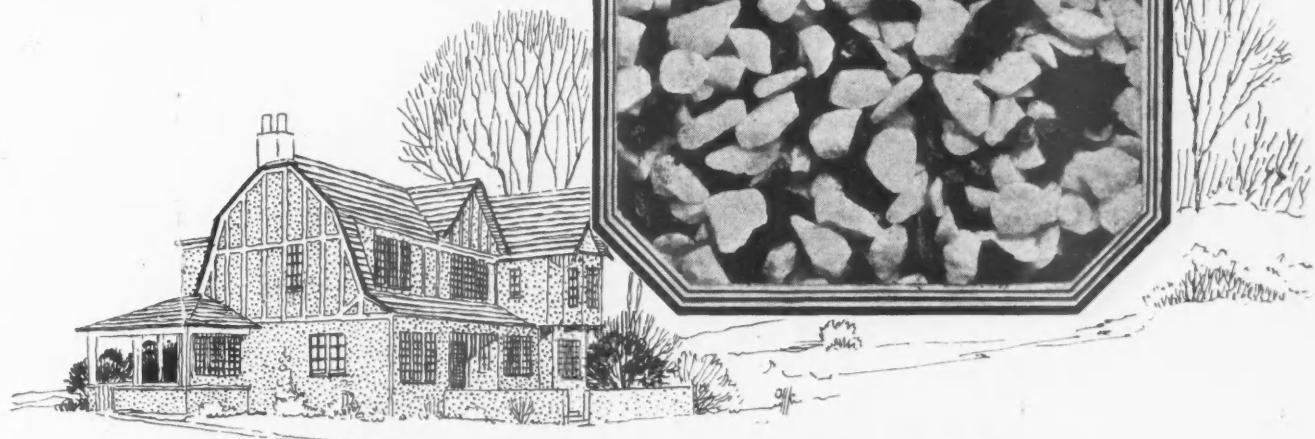


The Size of These Two Plans Is Almost the Same But There Is a Variation of Arrangement to Meet the Ideas and Requirements of Different Home Builders Who May Desire a House Like This One.



A Home-like House of a Modified Spanish Design in Which Brick Has Been Most Effectively Used to Ornament the Stucco Finish Which Is Characteristic of Spanish Homes. The rough texture brick against a cream colored stucco is particularly effective in this hit or miss decoration.

JET BLACK VICRO



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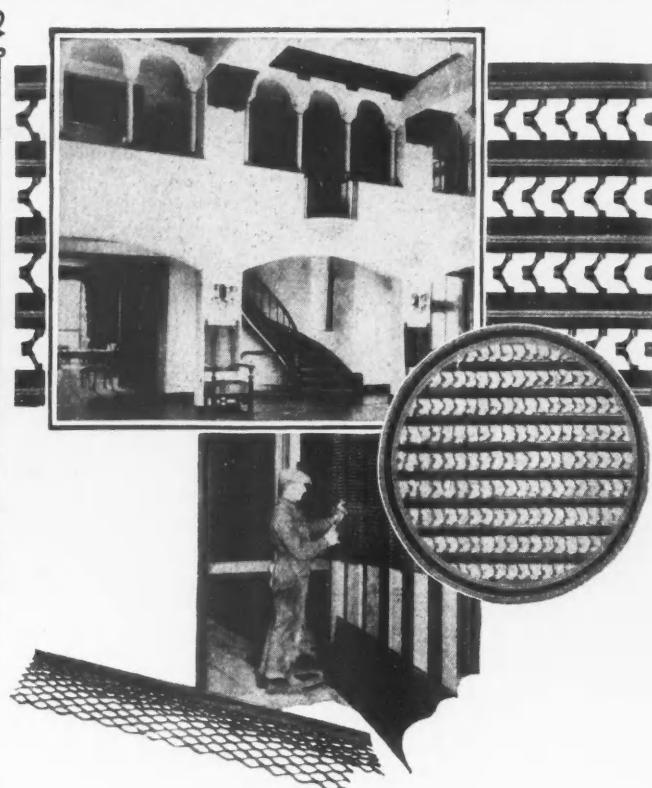
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of useful information.*

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Steel Doors are nowadays used everywhere. The various standard sizes of Truscon Steel Doors meet all practical requirements. They are durable, fireproof and never need repairs.

Steel Doors for Added Safety and Permanence

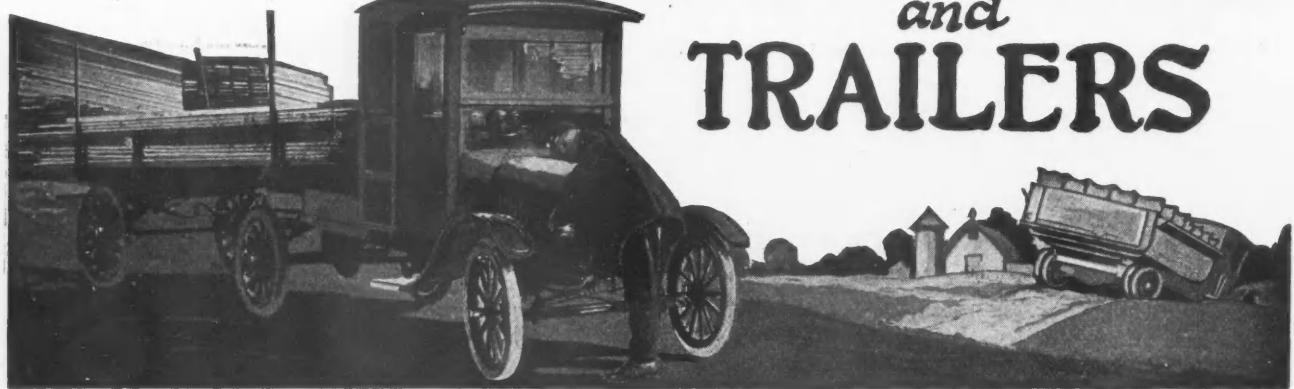
Truscon Steel Doors are sturdily built to withstand the hard usage of garages, service stations, rear of stores, service entrances, basement partitions, etc. They are furnished in standard sizes, swing and sliding, single or double, with or without glass. Due to large scale production, they are extremely economical in cost. Truscon Steel Doors are also furnished in special sizes to meet any unusual requirements.

Write for literature and prices.

***TRUSCON**
TRUSCON
STANDARD
STEEL DOORS

*A complete line of Steel Buildings, Steel Windows, Metal Lath, Steel Joists, Steel Poles, Concrete Reinforcing for Buildings and Roads, Pressed Steel Specialties, Waterproofing & Technical Paints. Truscon maintains Engineering and Warehouse Organizations thruout the Country.

MOTOR TRUCKS and TRAILERS



Special Truck Bodies to Handle Brick, Block and Tile

THE transportation of brick, concrete blocks, tile, and similar building materials is a problem which, probably as much as any other, demands special consideration and special equipment. When brick are dumped from the ordinary dump body there is a large and exceedingly wasteful amount of breakage. They also occupy an unnecessary amount of space, quantities delivered cannot be easily checked, they cannot be easily protected from the weather in winter and this method is thoroughly unsatisfactory. The alternative of loading and unloading by hand is a slow, expensive process, not only in the cost of the labor required but also in the idle time for the trucks which results.

One of the most interesting and practical pieces of spe-

cial purpose truck equipment is a body especially designed for the handling of this type of material. It should be of particular service to the manufacturer of brick, block or tile and also to the builder who keeps one or more trucks occupied in the delivery of these materials a major portion of the time.

This body is made of a heavy sheet steel, of a size to hold a full capacity load of brick for the truck chassis on which it is mounted. Suitable bodies can be obtained for any chassis. The body is mounted on rollers and is moved forward and backward by means of a hoist and cable. The movement is between two booms which direct the pull of

(Continued to page 242.)



This Special Body for Handling Brick and Similar Building Materials Can Be Mounted on a Short Wheel Base Chassis Which Is Easily Handled Under Difficult Conditions and Permits the Depositing of the Material at Any Desired Point Without Breakage.

for Economical Transportation

CHEVROLET

Easy to Load



THIS sturdy One-Ton Chevrolet Truck is easy to load or unload because its floor is level with or lower than practically all loading platforms.

Also, its turning radius is extremely short, enabling the truck to swing quickly into position.

Time saved in loading—speed between stops—the big, powerful economical Chevrolet valve-in-head motor—the extra strong rear axle—and the most rugged truck-type construction throughout—these are some of the many advantages that Chevrolet engineers have built into the Chevrolet One-Ton Truck—this is why your most economical investment in a one-ton truck is to be found in a Chevrolet.

CHEVROLET MOTOR COMPANY
DETROIT, MICHIGAN
Division of General Motors Corporation

1-Ton Truck \$550 f.o.b.
Flint,
Mich.

Also Half Ton Truck Chassis \$395 f.o.b. Flint, Mich.

CHEVROLET
TRUCKS

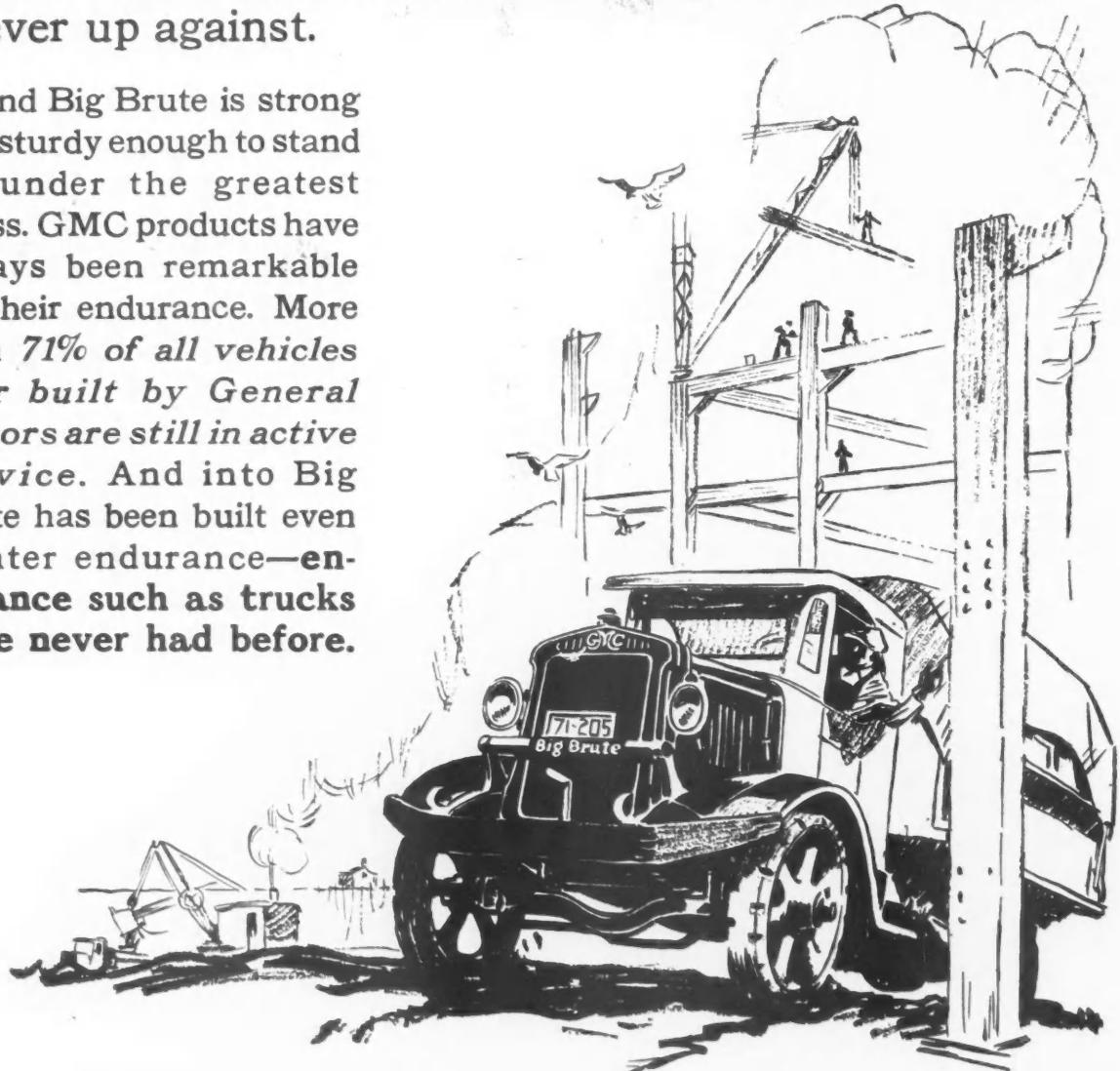
HALF
TON

AT LOW COST

Greater POWER and ENDURANCE in **GMC Big Brute**

WATCH Big Brute pull a heavy load up a steep hill—watch it plow its way through “heavy going”. Then you will realize its *greater power*. You can load it to full capacity—and more—knowing it is powerful enough to master the toughest job a truck is ever up against.

And Big Brute is strong and sturdy enough to stand up under the greatest stress. GMC products have always been remarkable for their endurance. More than *71% of all vehicles ever built by General Motors are still in active service*. And into Big Brute has been built even greater endurance—endurance such as trucks have never had before.



POWER and ENDURANCE such as trucks have never had before made possible by these features

53 Horsepower Engine

An engine powerful enough to master any job a truck is ever up against.

2 Range Transmission

Two separate pairs of constant mesh gears give the countershaft two separate speeds. By merely shifting the range lever (which is easily accessible from the drivers seat) the power can be transmitted either through the low super-power range for "heavy going", or through the high driving range for usual requirements.

This two-range transmission—an exclusive GMC feature—develops 30 per cent more pulling power than is possible with the same size engine and the usual type of transmission.

This two-range transmission is also an economy feature. It makes it unnecessary to "over-power" the truck, and provides a power transmitting unit which assures economical operation under any and all conditions,

Pressed Steel Frames

The sturdy heat-treated pressed steel frame, with its six cross members and rear end diagonal braces mean greater semi-flexibility and endurance.

Radius Rods

—relieve the springs of all stress except carrying the load, the driving thrust from the rear wheels being delivered through the radius rods direct to the frame. The radius rods also assure perfect alignment of the rear axle.

Simpler, Stronger Axles

—built with fewer working parts and great over-strength—the rear axle being a full floating, worm-gear type.

Products of

Yellow Truck and Coach Manufacturing Company

subsidiary of General Motors

GMC Big Brute, 3½ and 5 ton trucks

GMC 1, 1½ and 2½ ton trucks

Yellow Cabs - Yellow Light Delivery Trucks

Yellow Coaches - Hertz Drivself Cars

GMC 5 to 15 ton Tractors

A General Motors Product

Sold and Serviced Everywhere by Branches, Distributors and Dealers of

GENERAL MOTORS TRUCK COMPANY, PONTIAC, MICHIGAN

A DIVISION OF YELLOW TRUCK AND COACH MANUFACTURING COMPANY

the cables but do not take the stress of the load, the body is not lifted but is pulled over the back of the truck through the arc of a circle, eliminating the strain which would otherwise be exerted on the hoist.

The load of brick may be spotted wherever desired, the body lowered from the rear to the ground. Two pipes, which hold the tail gate pallet, are pulled out of the brackets, the body is pulled up slightly by the hoist, so that the brick will not be wedged against the sides and the truck is then moved forward, leaving the hack of brick neatly piled on the pallet.

This pallet is of inexpensive rough lumber and if lost costs little to replace. It can be picked up, however, after the hack of brick has been used and, in the meantime, keeps the brick up out of the mud. The body is also quickly demountable and two bodies are furnished with each truck equipment. In loading, the empty is spotted where desired for reloading, the truck is backed up to the loaded body and the body hoisted in.

Dropping a load and dropping an empty body and picking up a loaded one, require only three to five minutes and are one man jobs. As a result the truck is kept almost constantly on the road, with a minimum of delay at load-and unloading points. In addition to this no heavy labor is required of the truck driver and he can devote all of his energy to the brain work of driving his truck instead of to the heavy labor of loading, making him more valuable as a driver.

The standard sizes in which these bodies are made are 1,000 brick capacity for 2 or 2½-ton trucks, 1,500 brick capacity for 3½-ton trucks, and 2,000 brick capacity for 5 and 6-ton trucks. The brick capacity is figured on the standard 8 by 2¼ by 2¾-inch brick size and with the more common, smaller sizes the capacity is, of course, greater. After once counting a load of any size, however, the number of brick in a load of that size will always be known without counting. This is an added advantage, afford a quick and accurate check on the number of brick delivered.

Many manufacturers utilize this type of body to advantage in providing a balance between slack and rush periods. Delivery trucks are kept constantly busy, during slack



The Body Is Lowered Over an Arc, Depositing the Brick in a Neat Hack on a Wooden Pallet, the Whole Operation Requiring Only Three to Five Minutes.

periods, hauling reserve supplies of material to small storage yards located in close proximity to points where future deliveries will have to be made. Here the material is left in hacks on the pallets.

When the rush orders start to come in materials are delivered from these supplies. With the short haul and quick loading and unloading orders can be filled in the least possible time and customers are not kept waiting as would be the case if deliveries had to be made from the main yard with the long haul which that would involve. In this way the peaks are leveled off and at no time is the transportation equipment allowed to stand idle to increase the overhead expense of doing business.



Lumber Association Awards Prizes

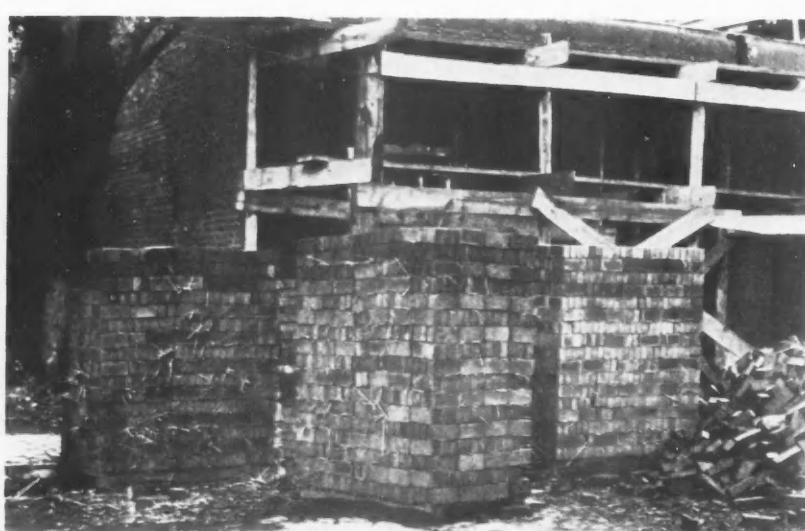
THE Northern Hemlock and Hardwood Lumber Association has sent out checks totaling five hundred dollars in prize awards, chiefly to residents of Wisconsin and Michigan. The prize winners submitted the best letters out of hundreds outlining the advantages in keeping money circulating at home through the purchase of home manufactured products insofar as possible.

They also discussed the advantages to architects, building contractors, lumber retailers and especially the home builder in specifying association trade marked and grade marked northern hemlock. The association mark which can be obtained by any hemlock manufacturer under proper safeguards, guarantees that the purchaser will get the grade and quality of lumber which he orders.

The interdependence of farm and factory in the purchase of each other's products was a subject well developed by the writers. Ralph Schepers, of Holland, Mich., was awarded first prize and Margaret J. Sherk second prize in the senior competition while first and second prizes in the junior competition for those of high school age went to Nicholas H. Fritz, of Madison, Wis., and Russell Traener, of Horicon, Wis., respectively.



"**G**OOD planning and good designing are so closely dependent on good construction that it is impossible to use building materials economically without calling attention to certain principles of architectural design."



Bricks Handled in This Way Are Up Out of the Mud, Take Up Little Space, Are Easily Checked for Quantity and There Is No Wasteful Breakage.



Contractors Make More Money With Fordson Tractors

The cost of excavating and moving dirt on construction jobs is materially lower where Fordson tractors are employed.

For example, the basement of a garage being built in Natick, Mass., was dug to a depth of 10 feet with a Fordson and a scraper. One yard of dirt was taken out and moved 70 feet every six minutes, resulting in a saving of 50 per cent over a horse powered scraper.

Another contractor at Warren, Ohio, operates 9 Fordson units for grading, plowing, digging and loading. Again the comparison is strongly in favor of the Fordson. On a test the tractor easily did the work of three teams. For loading dirt into trucks the Fordson powered shovel handled by one man has, in many cases, eliminated the expensive hand shovel crew.

Your nearest authorized Ford dealer can tell you many very interesting facts about the use of Fordsons by contractors. It will pay you to have a Fordson demonstration.

Ford Motor Company
Detroit, Michigan

CARS

TRUCKS

TRACTORS



Fordson
Tractor

\$495

f. o. b. Detroit

Better Plastering

Some Details on the Backing of Better Plaster and Stucco Work

WE have reached a point in this series of articles on Better Plastering and Better Stucco at which we think it opportune to glance over and develop some of the details which were presented only in their general aspect at the time.

One of the first things discussed was the matter of careful selection and application of wood lath. Only the other day a study was afforded of the plastering on the old Palmer House, built in Chicago shortly after the world famous fire of 1871, and which is now being wrecked to make way for a larger and more modern structure. One of the first things noted was the very fine grade of wood lath which was used as a base for plastering.

Measurements of both the lath and keps showed the lath to be quite 7/16 inch thick and that the space between the lath was equal to the full thickness of the individual lath. As a matter of fact, in the old days it was common for the architect's or owner's inspector to go over the building and carefully examine to see whether the lath was in shape for plastering. This he did by taking a lath and seeing whether it would pass between the adjoining lath. If it didn't, it indicated that the key was insufficient and the lath had to be torn down and reapplied correctly.

The lath used in the old Palmer House was roughly 7/16 inch thick and was rough and free from knots. Compare this with the modern lath which is a little better than 5/16 inch thick and one readily sees that one of the reasons for the failure of much of our interior plastering which is put

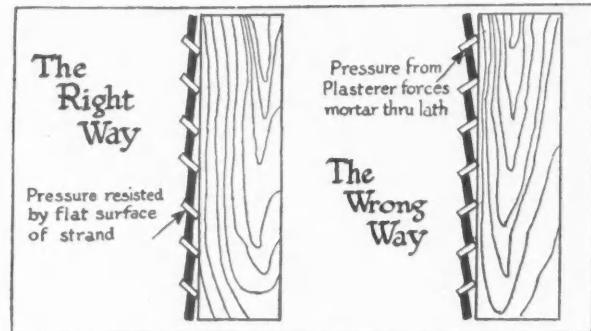


Fig. 1—In Applying Metal Lath It Is Essential to See That the Top Side Is Up, Providing Miniature Shelves on Which the Plaster Is Supported.

on a wood base is the fact that the lath is not thick and strong enough to resist twisting and warping. Gone, too, are the boundless forests of white pine from which came the Palmer House straight grain lath. Swamp tamarack, resin pine, and hemlock are the source of much of our wood lath and that is why unusual care must be taken to see that it is free from pitch resin, or acid stains, etc., which, if present, will leach out into the plaster and cause staining, disfiguring and discoloration which are so difficult to remove and cover up.

Probably the factor which had most to do to make old time plastering so satisfactory was the large plaster keys which were used. It insured a good fat plaster key which came out on the back side and held the plaster firmly in place so as to prevent plaster falling off ceilings and from cracking as it now does, at the slightest provocation. Jerry-builders have the tendency to overlook giving their men instructions to space the lath the required distance apart. We have observed numerous instances where perhaps a $\frac{1}{8}$ -inch key was allowed. Not only is this wholly inadequate but placing the lath so closely permits the plasterers to skim over the lath so the plaster may not fill up the

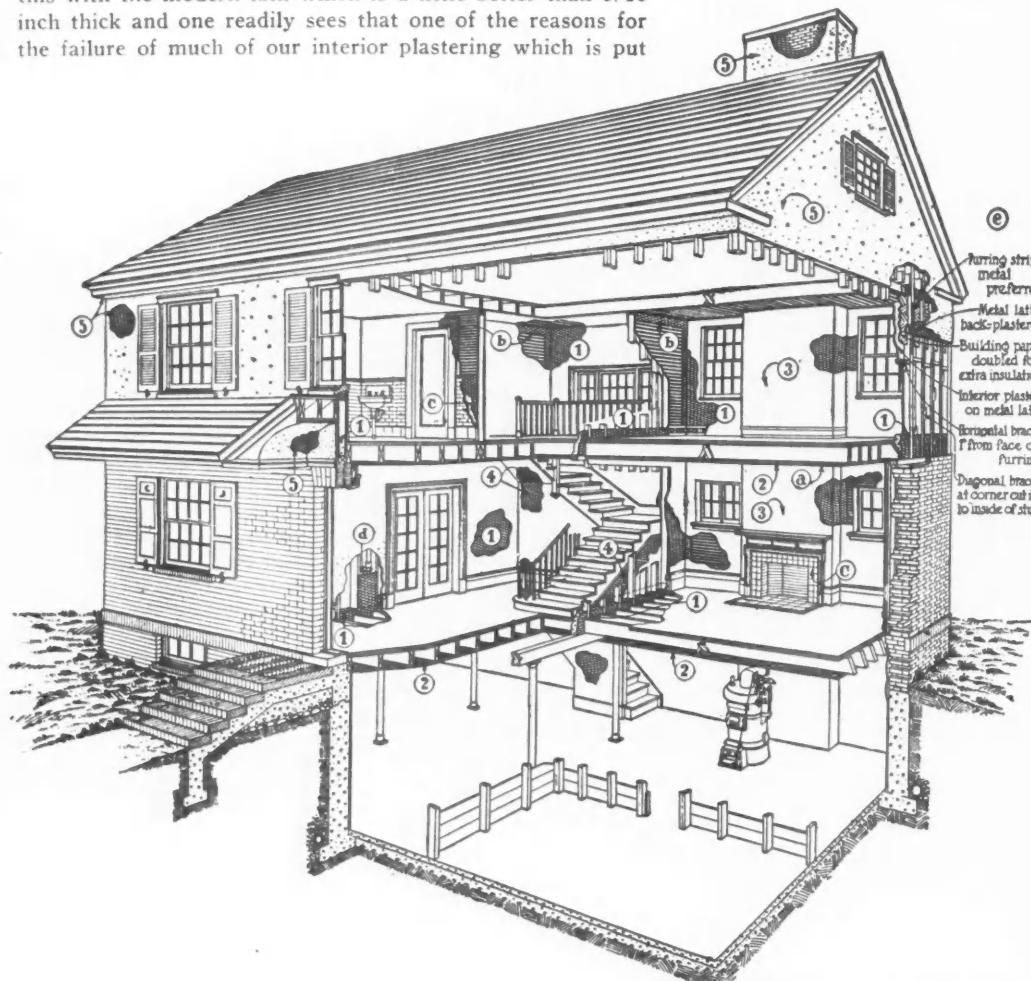


Fig. 2—The Numbers 1 to 5 Indicate Where Better Plastering Should Be Used for Fire Prevention. The letters A to E show where better plastering should be used to prevent plaster cracks.

World Leadership

brings
Lower Prices

On January 7th, Graham Brothers announced a substantial reduction in the prices of their complete line of trucks and motor coaches.

This was their third reduction in eight months.

It reflected again Graham Brothers pledge and determination to pass on to the buyer the full economies of rapidly increasing production.

The year 1925 was the greatest in Graham Brothers history.

It saw them advance to World Leadership in the 1½ ton truck field, and brought them the added distinction of being the largest exclusive truck manufacturers in the world.

Such positions are achieved only by enormous demand for a worthy product.

New Prices

1-Ton Chassis	-	-	\$ 975
1½-Ton Chassis	-	-	\$1245
M B M Low Chassis	-	-	\$1295

F. O. B. Detroit

GRAHAM BROTHERS
Evansville - DETROIT - Stockton
A DIVISION OF DODGE BROTHERS INC
GRAHAM BROTHERS (CANADA) LIMITED - TORONTO, ONTARIO

GRAHAM BROTHERS TRUCKS

*SOLD BY DODGE BROTHERS
DEALERS EVERYWHERE*

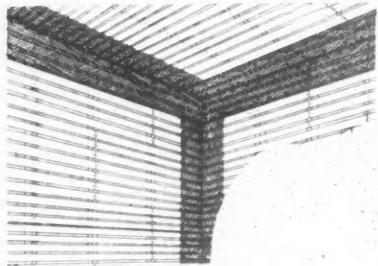


Fig. 3—A 12-Inch Strip of Metal Lath Bent Into the Inside Corners of Walls and Ceilings Reinforces the Plastering Even When Applied Over an Ordinary Base.

than 3d fine, 6-gauge wire nails should be used and unsparingly to insure that the lath is well secured to supports.

Concerning wood lath, the specifications of the Contracting Plasterers' International Association say in part:

"All wood lath shall be nailed to each stud, joist or bearing with joints broken, not over 7 lath to a break, no vertical or diagonal lathing allowed, a full $\frac{3}{8}$ -inch key to be left for lime and mortar, not less than $\frac{1}{4}$ inch for hard plaster."

Plasterboard advocates have developed a very interesting method for overcoming the most common cause of plaster cracks on this type of construction. This kink is as follows:

After the plasterboard is nailed to the wall, studs or ceiling joists, taking care to place them at least $\frac{1}{4}$ inch apart at all joints which do not come on the studs or joists, a strip of metal lath about 4 inches wide is applied over all joints between the plaster board sheets and is nailed to the studs or joists or clipped over the joints which come between supports. The plaster is then applied in the usual manner and it has been found that by reinforcing the joints in this manner the disfiguring cracks which may come between sections of plasterboard are almost entirely eliminated.

One of the most common uses for plasterboard is in repair work where the walls and ceiling are left intact. In these cases the plasterboard is nailed directly over the plaster and it has been found advisable to put pieces of corner lath consisting of narrow strips of metal lath along the angle between walls and ceiling to avoid cracks in those places.

The increasing popularity of metal lath as a plaster base now finds it used in many of the finest homes throughout the country, as well as in buildings such as apartment houses, hotels, store buildings, banks and wherever building codes require it because of its fire protective value. It suggests that readers will be interested in a further explanation of the right and wrong way of applying metal lath.

Observe the diagram reproduced at top of page 244. It should be noted that in the process of expanding the lath the strands are tilted slightly.

joints even as far as the back side of the lath. The result is that the plaster is given only a surface bond to the lath.

An examination of the Palmer House lath showed that it had been applied with the old-fashioned cut nail with at least one nail to each joist or stud crossed; all the more reason why nowadays not less

By applying the lath as shown in the left-hand figure the plasterer gains the advantage of having numerous miniature shelves on which the soft plaster can rest while setting. Lath turned upside down has a tendency to permit the plaster to slide off. This makes plastering more difficult, and also wastes plaster as more is forced through than is needed to make a satisfactory key.

Tests made at Armour Institute indicate that where metal lath inside corner pieces were used and applied over wood lath or other plastering bases in corners where partitions abutted, that it reinforced the corners so successfully that if the cracks came at all that they did not occur at the corners, but some distance away. Furthermore, when corners are so reinforced that cracks do not occur with minor shrinkage of the wood which will readily produce disfiguring cracks in unreinforced corners.

The method of applying metal lath for corner protection is shown in the diagram. Manufacturers of this product are now producing metal lath corner strips all ready for application on the job. Undoubtedly one of the least expensive items, they nevertheless are capable of accomplishing much in the way of eliminating annoying and troublesome plaster cracks.

STUCCO ON METAL LATH OVER SHEATHED CONSTRUCTION

©Associated Metal Lath Mfrs.
Chicago

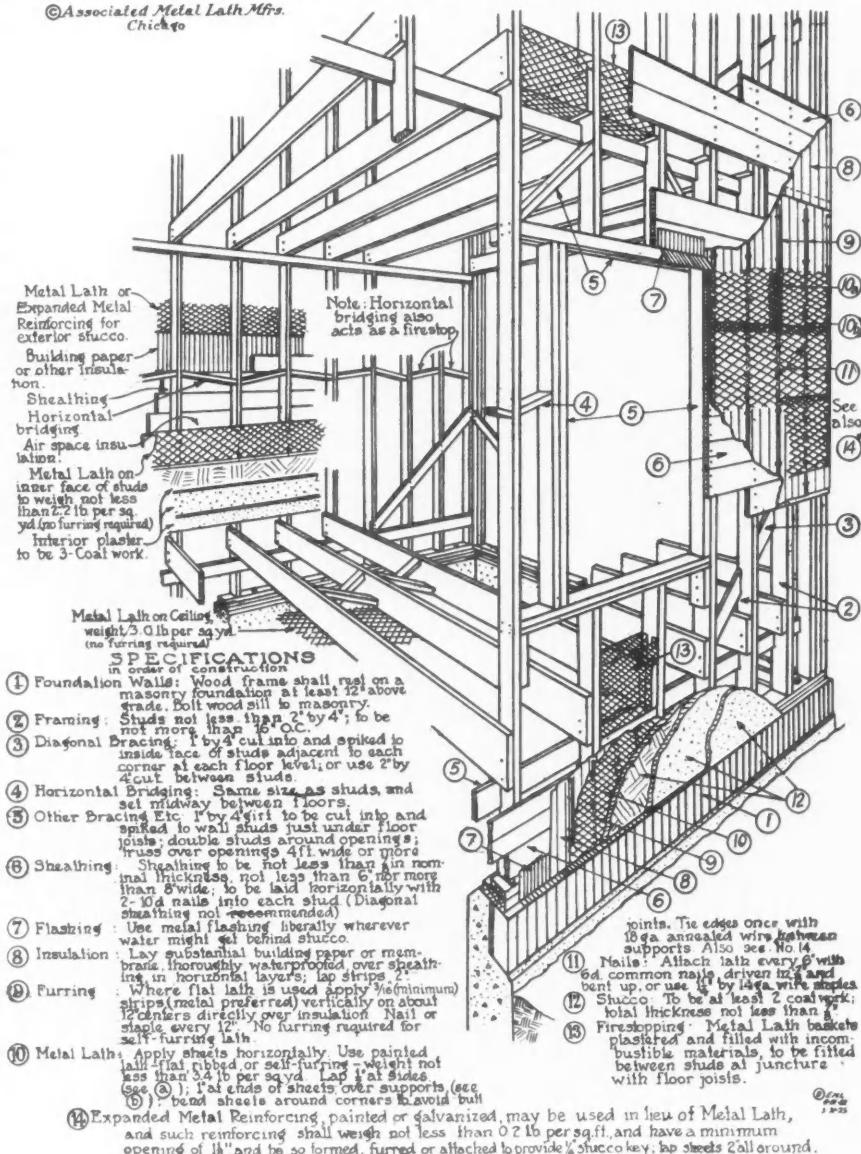


Fig. 4. Showing the Essentials of Balloon Frame Construction with a Proper Base for Stucco.

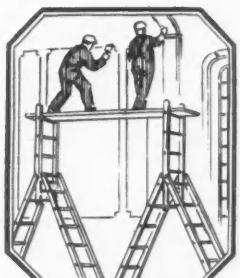
For Efficiency, Economy and Safety!

use

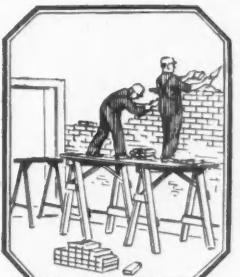
Good Ladders and Scaffolding



Wall Ladders—
Seaman Safety Brackets



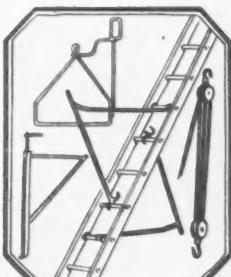
Safety Extension Trestles



Masons' Horses—
Folding Steel Trestle



Junior Safety Scaffold—
Cornice Hooks



Ladder Bracket—
Blocks and Falls—
Scaffold Iron—
Folding Scaffold Brackets

The risks are always great whenever ladders and scaffolding are required. It will pay you to cut hazards to a minimum by using Gold Medal Ladders and Scaffolding. It will save you time and money to have more convenient equipment.

Whether you want a swinging scaffold, masons' horses, a set of extension trestles, a step ladder, a wall ladder, in fact anything for scaffold work, we have it and can satisfy you.

The coupon below will bring you the true facts. Check the products in which you are interested and mail today.

Patent Scaffolding Company

New York,
50 Sunswick St.,
Long Island City

Boston, Mass.
49 Ellery St.

Chicago, Ill.
1550 Dayton St.

Kansas City, Mo.
1409 Lydia Ave.

Philadelphia, Pa.
2835 Bridge St.

Atlanta, Ga.
182 Haynes St.

PATENT SCAFFOLDING COMPANY, A.B.—3-26
(Mail to nearest office)

Without obligation send me complete information on:

<input type="checkbox"/> Step Ladders	<input type="checkbox"/> Extension Ladders
<input type="checkbox"/> Safety Scaffolds	<input type="checkbox"/> Safety Extension Trestles
<input type="checkbox"/> Masons' Horses	<input type="checkbox"/> Folding Steel Trestles
<input type="checkbox"/> Trestles	<input type="checkbox"/> Steel Folding Scaffold Brackets
<input type="checkbox"/> Ladder Brackets	<input type="checkbox"/> Blocks and Falls
<input type="checkbox"/> Cornice Hooks	<input type="checkbox"/> Seaman Safety Brackets
<input type="checkbox"/> Scaffold Irons	
<input type="checkbox"/> Branding Irons	

Name. _____

Address. _____

City. _____ State. _____



Safety Step Ladder

Gold Medal

Ladders and Scaffolding for Every Purpose



Another of the functions of better plastering is to safeguard homes against fire. Insurance companies now increase the rate of a building where "poor housekeeping" is evidenced by the presence of plaster cracks. Sound, crack-free plaster has been found to be a very effective fire retardant but when it cracks it offers the fire many avenues for communication to other parts of the building. Investigation has shown that over 90 per cent of all fires are of interior origin and that consequently the interior plastering which forms 80 per cent of the interior surface, performs a very important part in facilitating the confinement of the fire on the one hand, or in permitting its rapid spread on the other.

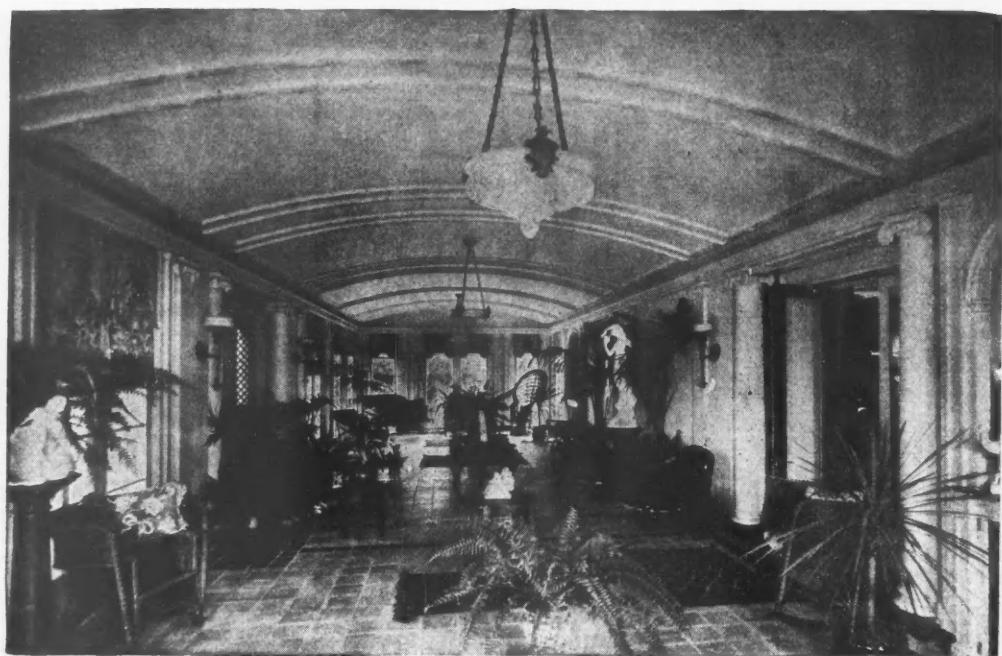
Some parts of buildings are more susceptible to fire hazards than others. They, at the same time, are those places most difficult of access and where an incipient fire may gain considerable headway before discovery. A national authority on fire prevention has cataloged these as follows:

1. Wood stud, bearing partitions and walls, and fire stops between studs and joists.
2. Ceilings under inhabited floors, especially over heating plants.
3. Chimney breasts, around flues and back of kitchen ranges.
4. Stair wells and under stairs.
5. The base and reinforcement for exterior stucco.

These parts of the building therefore should be so protected that, if fire does get a start within, it will be confined to the room of origin, and it has been found by fire tests of engineering laboratories that better plastering applied on metal lath will keep the fire so confined for at least one hour, giving the fire department ample time to reach the scene of the fire before it has had a chance to make substantial headway, and also allowing the occupants of the building sufficient time to make their escape without panic or injury. The diagram shown herewith indicates the places in the building which should be given especial attention from this standpoint.

In the matter of better stucco, which has been treated in its various details in preceding issues, it has been found that considerable interest has been aroused in framing details which will slow the entire construction. Fig. 4 is an outline diagram which covers the essentials of balloon frame construction, covered with sheathing and on which is applied a metal reinforcing base for the stucco. The various elements in the construction, in the order in which they are erected, are indicated in the diagram and these have been carefully checked with actual practice and found to give excellent results.

It will be noted that the sheathing is applied horizontally. It is the opinion of engineers that sheathing which is applied diagonally tends to set up stresses in the stucco which are apt to crack the finish. Attention is also called to the fact that even with the sheathing it is recommended that the building be diagonally braced at the corner so as to prevent racking caused by wind stresses and also to make



A Large Sun Room with Vaulted Ceiling, a Type of Construction Where Better Plastering Methods Are Essential to a Satisfactory Piece of Work.

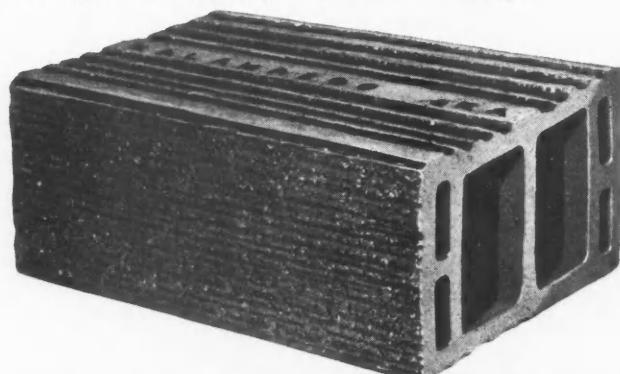
the framing self-contained in order that no stresses be communicated to the stucco applied over it.

One of the new wrinkles developed in stucco construction on the Pacific Coast, where stucco has received its greatest impetus and popularity, is the use of large mesh expanded metal reinforcing as a base for the stucco. This reinforcing is applied either with a deformation so as to be self-furring, or is applied over reinforcing strips or by the use of a new type of reinforcing nail or attachment which, while affording a positive method of attachment, also provides a separating feature which keeps the metal the required distance from the backing. The last method of reinforcement insures that the stucco will be pushed all the way back to the waterproof paper and that the reinforcement will be in its proper position in the stucco—that is midway between the surface and the backing. By this means absolute permanence of the stucco is assured.



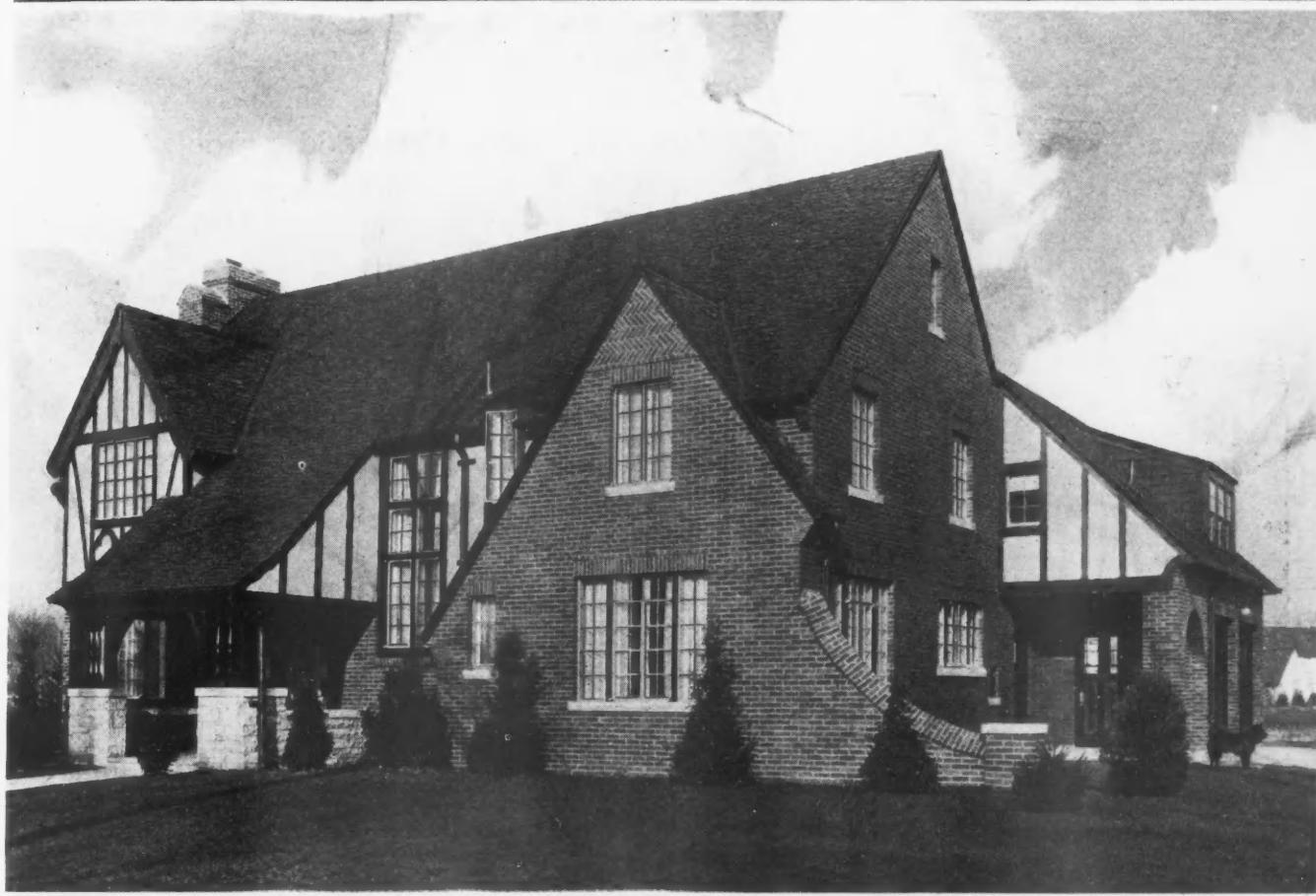
The Wrong Tile Shown

THROUGH a regrettable error in the advertisement of the Kalamazoo Tank & Silo Co., Kalamazoo, Mich., appearing on page 37 of the February issue, a mistake was made in the illustration of the glazed building tile manufactured by this company. The tile shown was a plain hollow unit whereas the Kalamazoo company's tile contains internal webs, as shown in the illustration below. These give the units a greatly increased strength.



The Matt Faced Vitrified Tile Block as Manufactured by the Kalamazoo Tank & Tile Company, a True Fire-Clay Product.

Who Built It?



Fenestra Casement Windows

FENESTRA Casements are supplied locally along with your other building materials. They come complete with hardware and a priming coat of paint. They are all ready to install—save building time.

Fenestra Basement Windows daylight the basement—another improvement that costs no more.



WHO built it? Every builder would like to have his work inspire that question—and have it answered with enthusiastic praise. And when such a question is asked, it means that the strikingly beautiful and useful features such as Fenestra Casements are helping the builder sell.

Fenestra Casements are smartly modern. Made of steel, they *always* open easily and

close weather-tight. Besides their exterior charm, they make every room more cheerful. Yet they cost *no more* than ordinary windows.

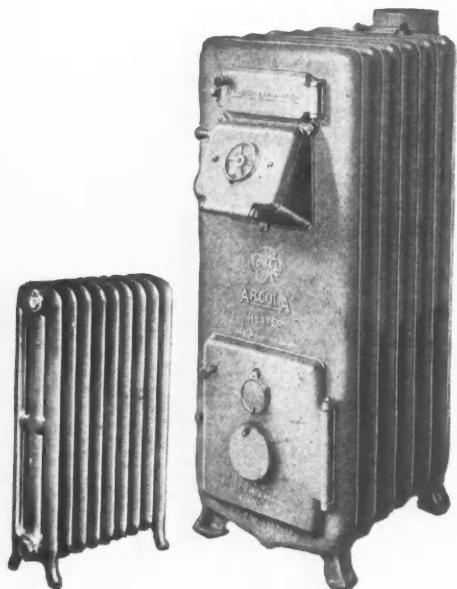
For any modern home, large or small, Fenestra Casements give the builder an extra selling advantage, worth real money. Have the Fenestra catalog and casement details handy for the next job. We'll send them on request.

DETROIT STEEL PRODUCTS COMPANY
C-2260 East Grand Boulevard, Detroit, Michigan

Fenestra

for homes, large and small
shops and small factories
garages and service stations
stores and other buildings

RADIATOR WARMTH for smaller homes



"RADIATOR WARMTH adds much more than its cost to the selling value of any home or building." So says one of the biggest men in the building business.

And his words are backed up by the experience of thousands of other builders.

IDEAL ARCOLA for smaller homes with or without basement

For six years ARCOLA has been warming small homes, stores, shops, offices and other small buildings.

It has transformed hundreds of thousands of chilly houses and other buildings into places of cheery warmth and comfort.

Ideal ARCOLA comes in two models—the ARCOLA Parlor and the ARCOLA Heater.

The ARCOLA Parlor is equipped with a handsome French gray enamel jacket and with glass panels through which the fire shines. It is automatically regulated, and sends healthful hot water warmth to radiators in other rooms, besides warming the room in which it stands.

The ARCOLA Heater is unjacketed and its low cost makes it ideal for the more modest homes, where it provides warmth and comfort.



AT MINIMUM COST and other buildings

RADIATOR WARMTH is a real selling asset, no matter what kind of home or building you have to sell.

In the medium sized home or building ARCO Round Boilers have been the standard for more than twenty years.

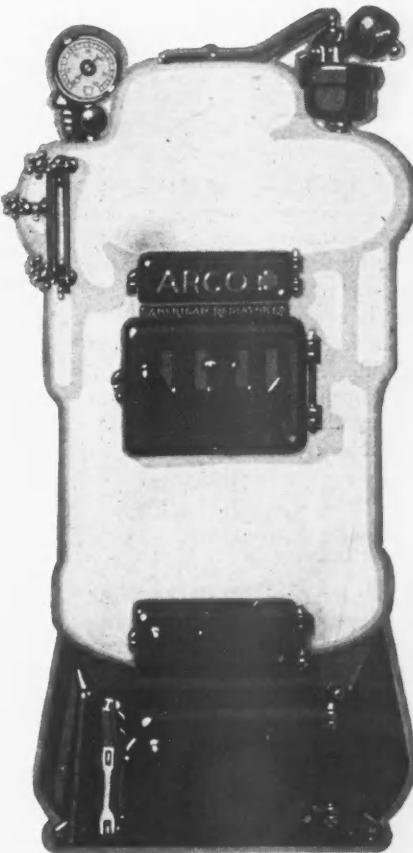
IDEAL ARCO Round Boiler

THE STANDARD ROUND BOILER OF AMERICA
for small, medium and larger size
homes and other buildings

Two years ago a builder in Buffalo built twelve homes — all exactly alike — with one exception, the heating plants. In six he put ARCO Round Boilers and American Radiators. In the rest he put hot air heat, because it cost less.

In six months he sold all the radiator equipped houses. Today there are still three of the hot air houses unsold.

The experience is typical, and it is the reason why builders everywhere are installing IDEAL Boilers and AMERICAN Radiators.



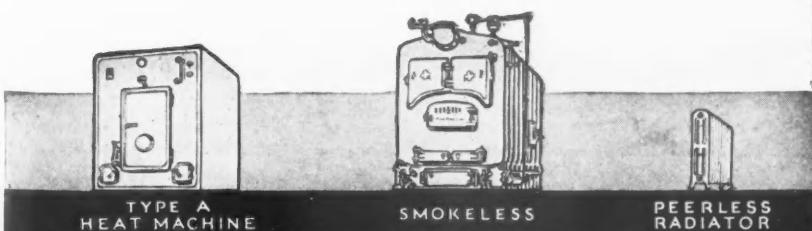
The Ideal Arco Boiler

This is the boiler that has set the standard of America for more than twenty years.

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GENTLEMEN: Please send me your booklets on IDEAL ARCOLA and ARCO Round Boilers.

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An Individual Hillside Home

By NAOMI SWETT

THE Alameda district, Portland, Ore., has the advantage of hillside location without even a hint of difficult access. Of this advantage the attractive English style home of Dr. and Mrs. W. M. Webster is a good illustration. It was designed by DeYoung & Roald, architects.

Facing a level street called the Alameda Drive, the Webster home is reached by a gradually sloping, beautifully curved drive which offers no terrors in wintry weather. The rear of the house, built over a hilly elevation, has panoramic outlook over the entire city of Portland.

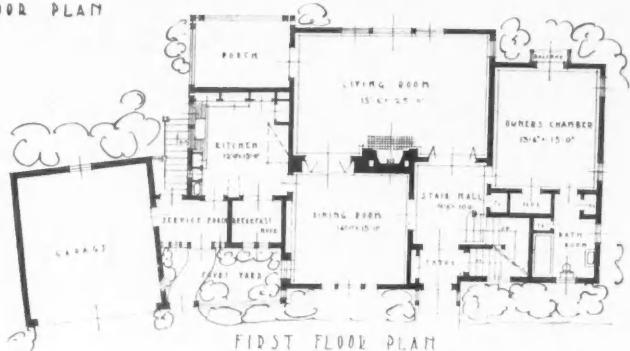
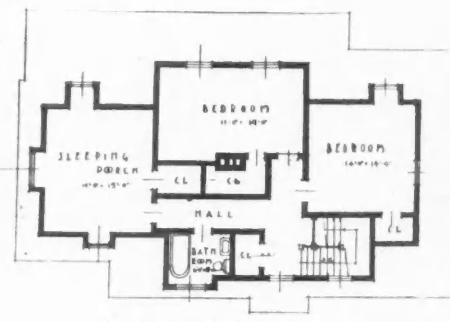
Stucco and half timber have been used to express the architect's idea of an interesting residence. Almost from the bottom of the hill has the building of this home commenced, for here is a winding stairway leading from the trolley line at the foot of the hill. A pretty little garden, too, has been created at the rear, which, together with the attractive garden at the front facing the street, frames the house in living color and greens.

Rather exceptionally the interest starts at this house in the basement, where, in addition to modern laundry, fruit room and fuel bins, is a completely separate two-room apartment, modern in every detail.

The Webster home proper, in its main and second floor, has seven well planned rooms. On the main floor are the living room, with fireplace, the dining room, breakfast room, kitchen and master's bedroom, which has private bath. The rear of the house, with the outlook over the city, has been chosen for the living room location. Every modern convenience, including a service porch and built-in ice chest that may be filled from the outside, has been

afforded the kitchen. A convenient back porch has direct access to the commodious double garage. Of particular beauty is the long arched window placed at the front of the house on the stair landing, a thing ornamental from within and without, and giving interesting lighting to the interior. The dining room, with its adjoining breakfast room, which also acts as a serving room to the dining room, has been located at the front of the house with view of the Alameda Drive.

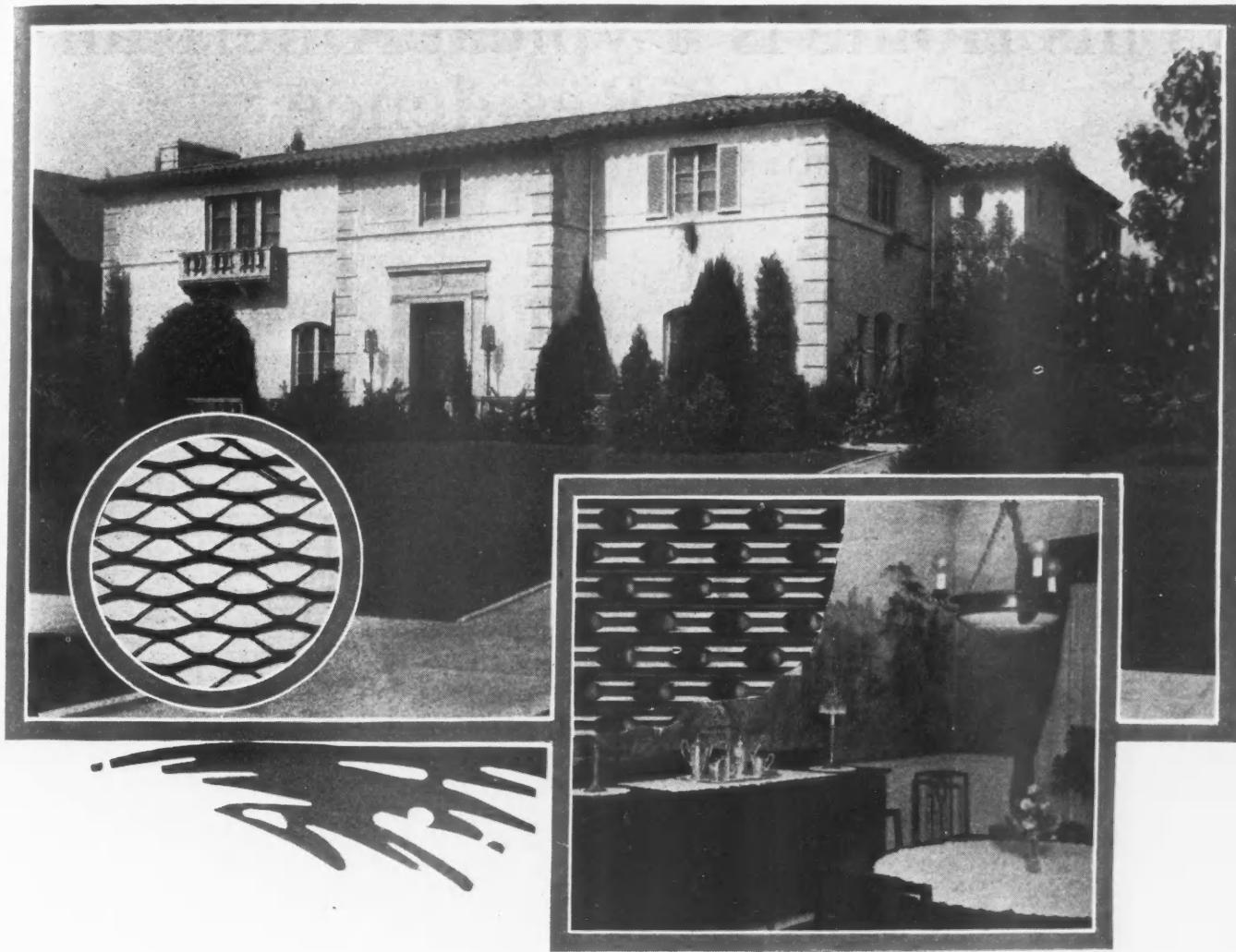
Upstairs are three bedrooms, a commodious bath and a spacious sleeping porch. The house has hardwood floors throughout, is heated with a hot water system and is provided with tiled bathrooms, and most modern type of built-in plumbing. Twelve thousand dollars was its total cost.



Garage and Service Entrance Are Two of the Interesting Features of the Floor Plan and There Is Also a Two-Room Apartment in the Basement.



This Hillside Home, Designed by DeYoung & Roald, Architects, Commands a View of the Entire City of Portland, Ore., from the Windows of the Living Room, but Is Reached by a Gradual Slope from the Boulevard at the Front.



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trowel, perfect self-furring, and sure-grip key.

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This Home is Typical American Country Residence

HARRY LUCHT, Architect

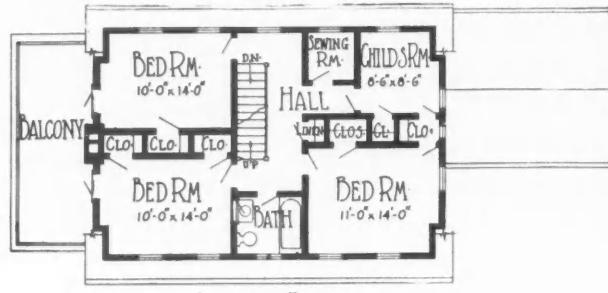
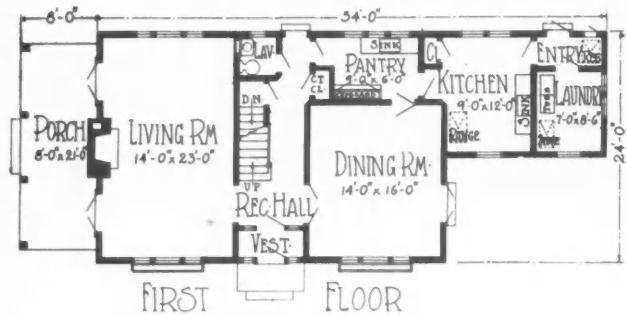
THE new home of Henry Nutt, Dongan Hills, Staten Island, N. Y., is typical of the best modern American country residence design.

Placed upon rising ground this house is admirably situated to command the best view of the surrounding landscape and at the same time presents its most attractive side to the passing public. The elimination of raised foundations places it close to the ground to fit into its high location.

The walls are finished in broad shingles and striped awnings add a pleasing touch of color to the exterior. Placing the main entrance at the side affords just the right

amount of seclusion for the screened porch and the latter serves as a convenient entrance from the driveway.

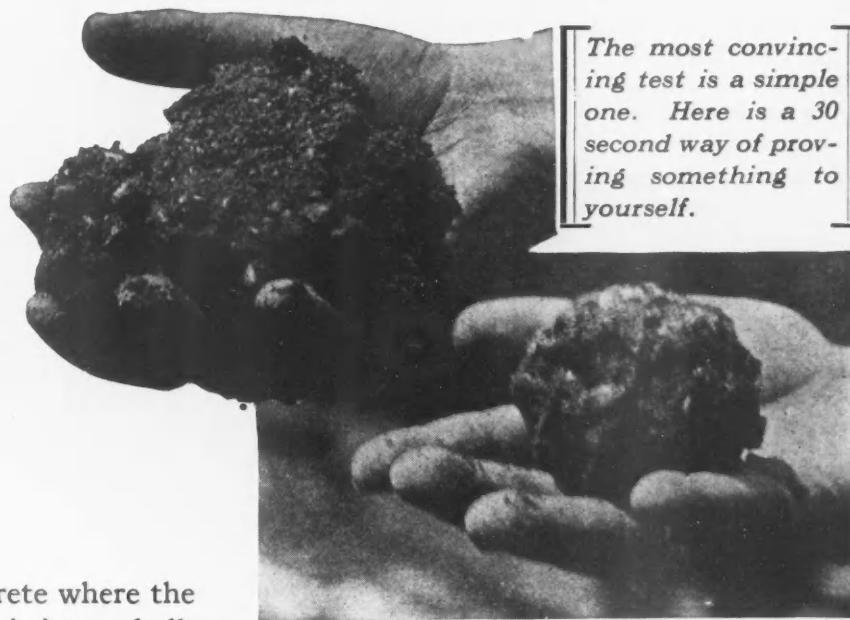
The floor plans characterize this as a true family home, arranged for living comfort. The large living room is provided with a fireplace and French doors open onto the screened porch. The dining room also is large and the kitchen and laundry are well separated, being placed in a wing, without being at an inconvenient distance. A first floor lavatory is another comfort feature. On the second floor are three large bedrooms, child's room, sewing room and bathroom and seven good closets.



This Comfortable Residence, on Staten Island, N. Y., Presents an Inviting Appearance to the Passer Which Is Carried Out Throughout the Interior. Comfort is evident in the large living room with its fireplace, the screened porch and the general arrangement of rooms. The second floor plan shows seven separate closets in addition to one on the first floor. It is the work of Harry Lucht, Cliffside, N. J., architect.

Bill says, "TRY a HANDFUL!"

It's the Semi-Wet Wallbuilder Mix"



The most convincing test is a simple one. Here is a 30 second way of proving something to yourself.

PICK up a handful of concrete where the pile's not so wet. Squeeze it into a ball. **Watch the ball.** If it's over dry, the blamed thing crumbles. If it's too wet, you'll know it by the way it just naturally flows through your fingers. Between, there's one that's *semi-wet* (the Boss calls it). That's like the one in the pictures. Like a snow ball only getting harder all the time. Like wet sand you see kids making tunnels of. That's it—like modelin' clay—just like that.

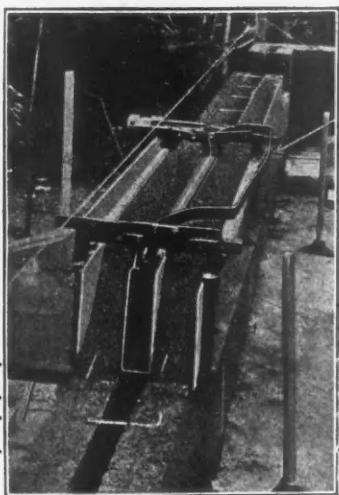
"Fill the Wallbuilder with this 'semi-wet' concrete, tamp it and slide her along right away. The wall stands up 'cause the mix's right. In an hour or so, it's ready for the next course. That's why the Wallbuilder puts forms in the discard. Don't need to wait five

or six days for concrete to set. And experts agree the semi-wet mix's the strongest.

"There's why the Wallbuilder makes speed. Another thing's the $2\frac{1}{2}$ inch unbroke' air space all around. That keeps out cold and dampness. And cuts out furring, lathing, and scratch coat plaster. So you see you don't use the Wallbuilder just where concrete's called for. Figure your double wall *against* any other kind—brick, tile, or block—and get the job.

"Help yourself to a handful!"

DEALERS: A few choice territories are still open. Write for details.



The Van Guilder Wallbuilder shown in place on wall is filled with semi-wet concrete and tamped. Lever indicated by arrow is then lifted, which collapses the center core and expands the outside plates, thereby freeing the concrete on all sides. The Wallbuilder is then instantly slid forward. A foot of wall a minute.

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Tell me what the **VAN GUILDER WALLBUILDER** can do for me. Local costs are—Cement per bbl.

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In Half-Timbered English Style

By HERBERT C. CROCKER

EXTERIOR attractiveness, with the roof lines well broken, and interior conveniences are the outstanding features of the nine-room home in the accompanying illustrations. It was recently completed in one of the new residential sections of St. Louis, Mo.

The living room is a spacious one, 13 feet 8 inches by 21 feet 5 inches, and it is entered through a vestibule, fitted with a closet on the right and convenient for numerous articles during inclement weather. One end of the living room is ornamented with an artistic fireplace, a bookcase being built to the right and a seat on the left.

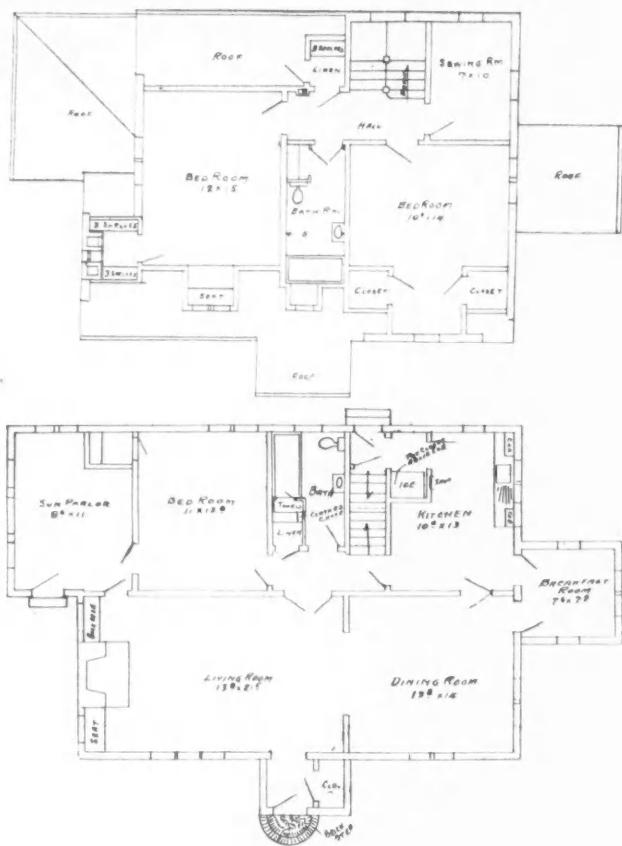
The dining room is to the left. It is 13 feet 8 inches by 14 feet and has ample wall space for the furnishings of the room. A breakfast room is attached to the dwelling and if one desires it might easily be enlarged for a garage.

Well obscured from general view are a sun parlor, bedroom, bath and kitchen on the first floor. The sun parlor is 9 feet 6 inches by 11 feet. It is amply large for a bedroom. The bedroom on the lower floor is 11 feet by 13 feet 8 inches and has large closet space.

The kitchen is 10 feet 6 inches by 13 feet. One wall is given over to the sink with cabinets for chinaware and closets below for other utensils. The ice box is placed in a closet arrangement.

The bathroom is fully equipped, with a closet for linens, another for towels and the clothes chute is located in it.

The upper floor is laid out for two large sleeping rooms, a sewing room, bathroom and more than the average space for closets and storage. The larger bedroom is 12 by 15 feet and the other is 10 feet 6 inches by 14 feet. The sewing room is 7 feet by 10 feet and may be used as quarters for a servant.



Half-Timbered Stucco, in the English Style, with Small Square Window Panes, Wooden Shutters and Flower Boxes Under the Windows, Make the Exterior of This Home Pleasing to All Who Pass. The nine rooms shown in the floor plans at the top of this page live up to the expectations aroused by the exterior appearance.

BIGGEST BUSINESS BOOSTER EVER PUBLISHED!

IN celebration of its Twenty-first Anniversary—the triumph of more than a score of years—the American Builder will publish a 1,300 page home builders' book, to be known as the American Builder Year Book of Building Designs. This mammoth volume, bound in permanent, hard covers, will be the most forceful developer of business ever published for the use of the great building industry. Every contractor, builder, dealer, architect and craftsman in the United States will find the 1,300 page American Builder Year Book a most effective and most productive sales manual—a complete reference volume always at hand for instant study and for immediate demonstration to prospective home builders. A partial contents of the 1,300 page American Builder Year Book is given below and at the right appears a reproduction of the four-color cover design, in reduced size.

Partial Contents

500

Modern Building Designs—Homes, Stores, Garages, Farm Buildings, Every Type of Building illustrated, many pages in full colors.

200

Pages of helpful articles, illustrating and describing the latest ideas in building, finishing and furnishing.

500

Pages of Manufacturers' Reference and catalog matter, covering every form of building material, equipment and service.

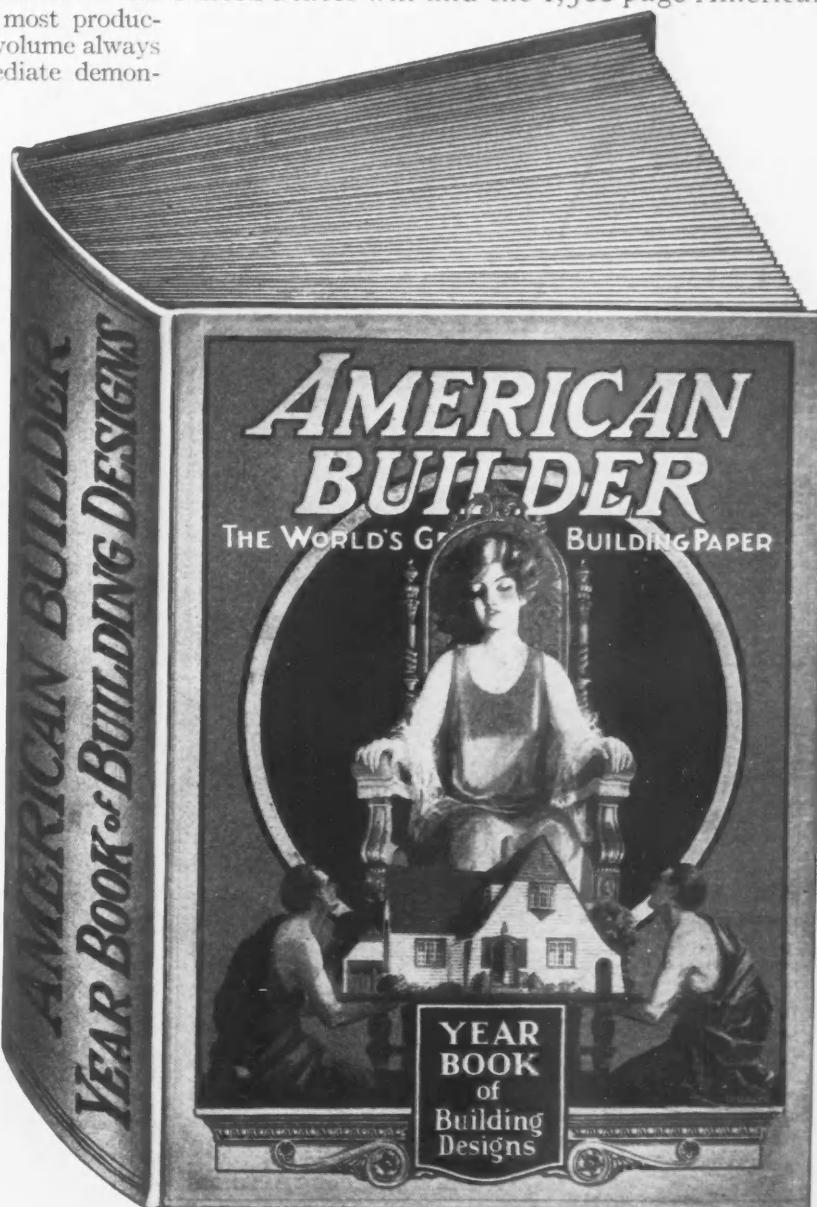
100

Pages—Indexes and Classified Directory—A Complete Buyers' Guide to the best firms and their products.

A Free Copy to You

We guarantee to send a copy of the 1,300-Page American Builder Year Book to any address in the United States, free of cost and postage paid, in conjunction with a multiple subscription order to the American Builder Magazine—the "World's Greatest Building Paper." Just fill in and mail the coupon below for full information about the Year Book and how easily you can procure your free copy.

American Builder
1827 Prairie Ave., Chicago, Ill.



A Book of 1,300 Pages, 8 1/2 by 11 1/2 Inches, Bound in Hard Covers; Ready for Distribution April 1, 1926, to Contain 500 Designs of Homes and All Other Buildings, Also Specification and Buyers' Guide and Complete Classified Index.

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Building—Train at
Home for Big Money
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America's greatest and most profitable industry. Here is a field
whose future is insured by the normal growth in population and
the industrial expansion of our country. There is a big building
shortage now and many competent observers predict that our
largest cities will be practically rebuilt in the next ten years due to
ever higher standards of living. Six Billion Dollars spent each year in building
means fortunes for thousands who have the vision to grasp the opportunity
open now to get in on the ground floor.**

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Book" tells all. Ask for
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College.**

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chitectural Drafts-
man. Thanks to
Chicago Tech." —
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Haley, Tenn.**

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nine buildings." —
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No need to quit your present job. Keep your present income and prepare for a bigger one. Our simple "Practice Plan Method" will qualify you quickly in your spare time. Into it has gone over 25 years of experience and the best knowledge of our large staff of architects and builders. It is simple, complete, resultful. Practical, successful builders guide you. Lessons in plain English. A common schooling is all you need. Get the facts now—today.

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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Cinder Concrete Products Convention Held

THE annual convention of the National Cinder Concrete Products Association was held at the Benjamin Franklin Hotel, Philadelphia, Pa., February 1-2-3, 1926. The first day was devoted to directors' meeting, receiving reports of various committees, and the election of officers for the coming year. LeRoy A. Goodwin, of the Concrete Specialties Company, Camden, N. J., was elected president.

The second day's session was devoted to a general discussion of the industry and matters pertaining to the improvement of same, together with talks on various subjects relating to the industry. The annual banquet of the association was held at 7:30 p. m.

The third day of the convention was devoted to inspection of the plants of the Straub licensees in this section.



LeRoy A. Goodwin, of the Concrete Specialties Co., Camden, N. J., Was Elected President of the National Cinder Products Association.

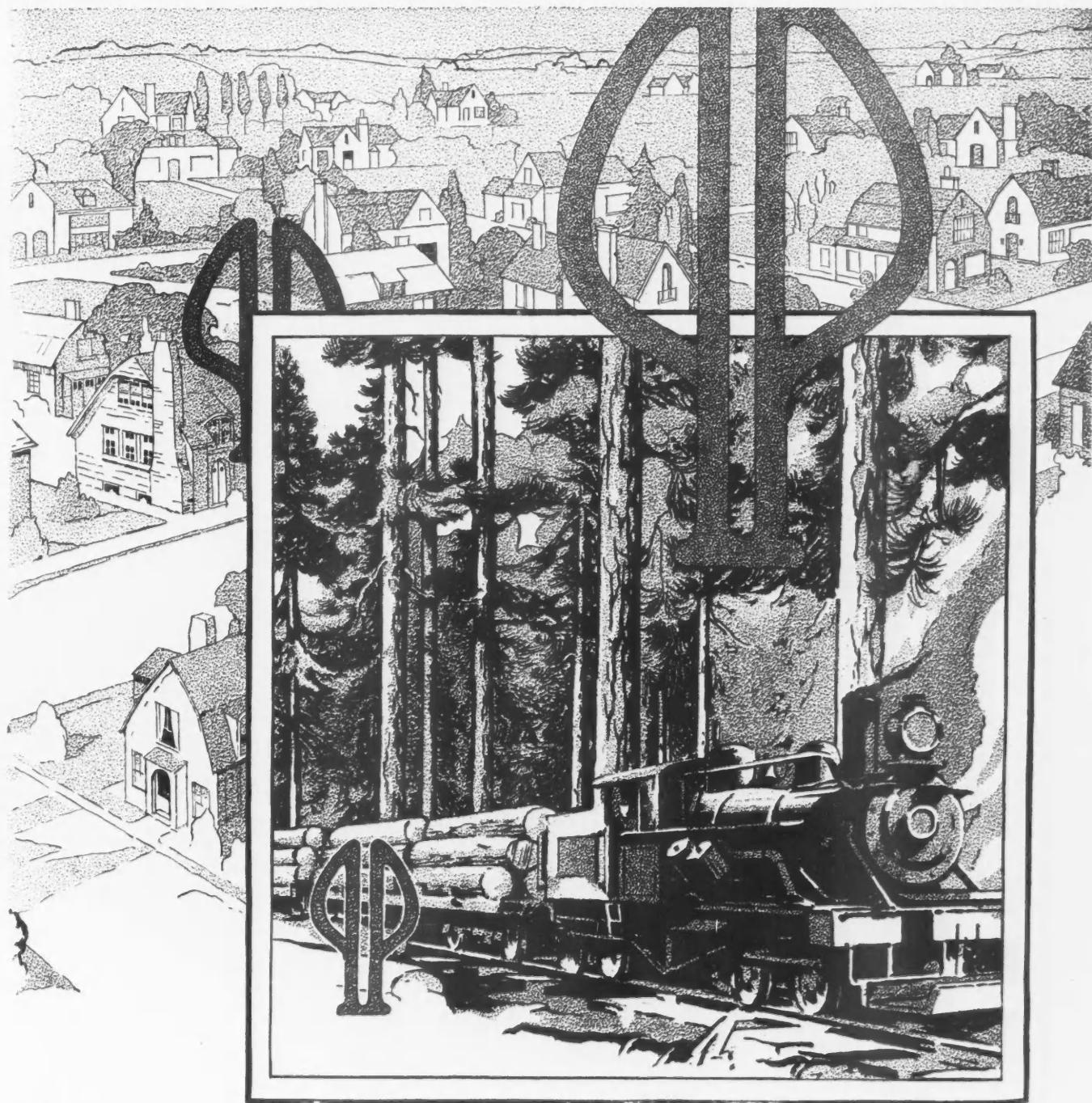
Open Memphis Sales Office

THE National Enameling & Stamping Co., Inc., Granite City, Illinois, has announced the opening of a new sales office at 808 Fidelity Bank Building, Memphis, Tennessee. Mr. F. A. Ernest, who was formerly Chicago district sales manager for the Falcon Steel Company, will be in charge of this office, handling all of the company's products, galvanized sheets, black sheets, blue annealed, tin plate and plates.

Syntron Hammer Manufacturers Adopt New Name

THE National Electric Manufacturing Co., of Chatfield Woods Building, Pittsburgh, Pa., has formally changed its name to "Syntron Company." This is another evidence of the trend toward a definite name tie-up between product and maker.

It is interesting to note, in passing, that the word "Syntron" is a coined word, happily built up from syllables of the words Synchronizing Electrons.



Φ A train-load of Pondosa homes “in the rough”

PERHAPS these pine logs at this very moment are stored, cleanly cut, ready for your use, in a local lumber yard. This logging scene was made from a photograph taken months ago in the Inland Empire of the Great Northwest. Since then the logs were carefully *milled*, the lumber thoroughly *seasoned* and rigidly *graded*. The quality insuring trade-mark was stamped on the end of every stick.

Use Pondosa, Sovereign of Softwoods. Thousands of builders do. Because it is so easily worked, so light, yet strong. Takes nails in short grain without splitting. Is beautiful and economical for every building purpose. The supply is plentiful at good lumber yards. Ask for it by name. Write for interesting free booklet. Address Dept. 22, Western Pine Manufacturers Association of Portland, Oregon.

Pondosa Pine Φ

The Pick o'the Pines



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this booklet

TIME-TESTED, and weather-proof!



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The builder who pins his faith to this high-grade material will find it not only satisfactory to him but that his customers are enthusiastic over its beauty and charm.

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"Smooth as a Kitten's Ear"

North Joins Steel Institute

THE American Institute of Steel Construction announces an extension of its activities and the addition to its staff of A. T. North, member of the American Institute of Architects and until recently associate editor of "The American Architect."

Mr. North particularly will direct the extension of the Institute's activities along two important lines—the organization of a department of architectural relations and the publication of a sales manual.

The organization of the department of architectural relations will enable the Institute to make contacts and develop relations with architects, the faculties of architectural schools and their students, and with general contractors and owners.



A. T. North, Formerly Associate Editor of "The American Architect," Has Joined the Staff of the American Institute of Steel Construction.

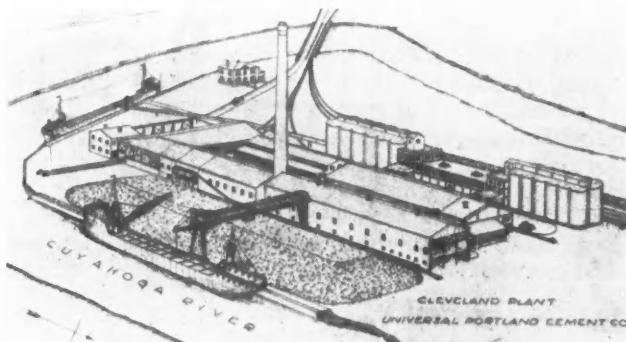
Weatherstrip Business Expands

M R. HOFFBAUER, president of the Hoffbauer Company, manufacturers of A. B. C. weatherstrips, says that the rapid expansion of their business is definite proof that the public's attention has been turned permanently to keeping expensive heat inside the house by the use of weatherstrips. The company has just moved into its new, larger quarters at 16-20 East Twelfth Street in order to better care for the rapidly rising number of owners of homes, apartments and public buildings, who are using weatherstrips.

New Plant for Universal

THE Universal Portland Cement Company has just bought a tract of land in Cleveland upon which it intends to build a modern cement plant with capacity of a million and a half barrels annually.

Plans for the new plant which have already been drawn are being perfected and it is expected construction will start in the near future.



Work Will Soon Be Started on a New Plant for the Universal Portland Cement Company in Cleveland, Ohio.

Finally the **SUCCESS LINE!**

Profit \$189⁰⁶ per DAY
 -^{up to} Capacity up to 4800 per DAY

BLOCK - BRICK - BUILDING TILE
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COMPLETE "DOUBLE-PROFIT-MAKER" **PRODUCTS PLANT**

THE final plant, long sought by manufacturers of concrete products, has at last become a reality—a harmonious unit that produces block, building tile and brick; smooth or faced products; a full variety in many sizes for all purposes. And it does it without hand labor from the time DRY CEMENT AND AGGREGATE are conveyed from below the floor level and dumped into the overhead power mixer until the time finished products are delivered at the output side. Specific capacities 2400 Block—4800 Building Tile—24,000 Brick PER DAY!

Revolutionizes Present Methods—Eliminates Men— Reduces Costs—Makes Better Products

The "SUCCESS" Complete Products Plant sets a new unapproached standard for both capacity and actual output. Also establishes a new high level for production per man and per dollar invested in equipment. Moreover, it sets up a new record for uniformity of product both as to mix and density. Produces all units with web marks and air cells of best approved design and scientific correctness—the kind endorsed by leading architects. Assures greatest value to building owners and greater profit to contractor, builder and products manufacturer.

How to Achieve Big Success On A New Basis Is Fully Explained In New Free Book

"WIN MANUFACTURING LEADERSHIP"

How this wonderful equipment is revamping manufacturing methods, costs, prices and profits—what a huge market awaits its production of all sizes, types and faces of units—why it appeals to men of small as well as great capital—how you can start with full equipment or part and yet earn full equipment from part equipment profits—all is told in this remarkable new book. Send coupon for it NOW!

Gives Costs—Profits—Facts—Figures—Blue Prints

There absolutely is no other equipment like it on the market—none where each part can perform so efficiently by itself or in combination with other parts—none where you can start where your finances permit and know definitely that finally you will have the full plant—all parts working in perfect balance—each adding to your profit and cutting your costs. By all means

Send this Coupon Today! Get Complete Facts!

\$983⁰⁰ Profit IN SPARE TIME MADE FROM \$23.00 INVESTMENT



Molds as Low as 14⁸⁰ Each

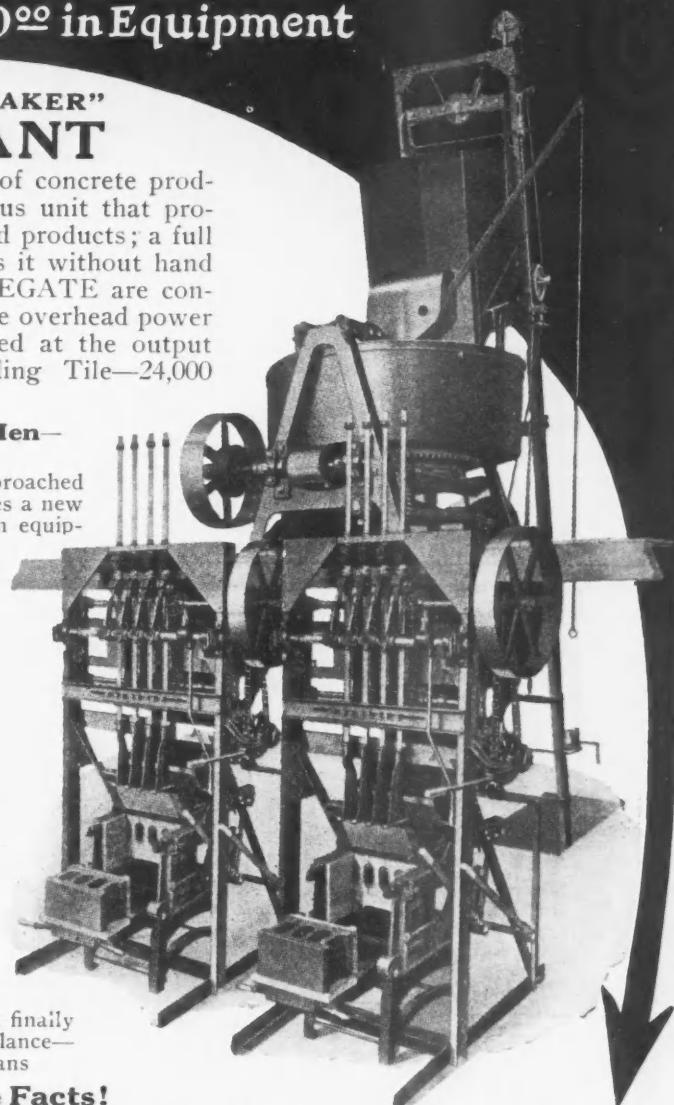
Louisiana man's record shows, in addition to above profit on our CAIRO flower-box mold, he made \$15.00 profit on each of 300 lawn benches; \$2.50 profit on each of 250 ARDMORE vases; \$10.00 on each of 80 bird baths, etc., etc.

You Can Beat His Success!

Full time operators build big enterprises of their own from a "one-mold" beginning making ornamental products, drain tile, sewer pipe, fence posts, porches, etc. Coupon brings UTILITY catalog.

Concrete Equipment Co.,
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FREE and without any obligation—

- Send me your "SUCCESS" Line Catalog, also blue prints, etc., showing how I can win Manufacturing Leadership.
- Send me your "UTILITY" Catalog of ornamental molds, etc., showing how I can duplicate the Louisiana man's record.

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City _____ State _____

Occupation _____

Something New in Contests

"**T**HERE are any number of prize contests," says Arthur T. Upson, forest engineer, commenting on the \$2,000 prize contest of the National Lumber Manufacturers' Association, "but this man-in-the-overalls contest is in a class by itself.

"The prize is a purse of \$2,000, divided into nine cash prizes, the first being \$1,000, awarded for the best ideas or devices for improving the manufacture of lumber and effecting economies in material and labor and generally bettering the industry mechanically. It is open to everybody, whether employed in a sawmill or logging camp or not. The only conditions are that the entries must be practical and meet with the requirements laid down by the contest committee. These are simple and few."



National Gypsum Company Formed

ANNOUNCEMENT has just been made of the formation of a new and powerful concern for the manufacture of a new gypsum wallboard. The new company entering the field is the National Gypsum Company of Buffalo, which will manufacture an improved gypsum wallboard.

With the formation of the company is also announced the acquiring of extensive new gypsum deposits in the western New York field which, by the tests of the Babcock Testing Company, is of a purer and better quality than has previously come from that field.

The plants of the company at Clarence, N. Y., are already under construction and it is expected will be in production on April 1st. The trade name of the new product is to be announced on March 1st.



Outside or In—

You'll make more money painting the DeVilbiss way

No matter what nor when you paint, painting with the DeVilbiss Spray-painting System speeds up your work 3 to 5 times. Hours of time are saved and more dollars of profit made.

Besides, improved work is done on every sprayed job and you have a more satisfied crew of painters.

Investigate this well established, greater profit DeVilbiss way of painting. Interesting facts will be gladly mailed. Address—

THE DeVILBISS MFG. CO., 238 Phillips Ave., TOLEDO, OHIO

DeVilbiss
Spray-painting System

Autocar Reorganization Planned

RORGANIZATION of the Autocar Company, of Ardmore, Pa., one of the pioneers in the manufacture of commercial automobile trucks, to include an issue of non-voting stock, with provisions in the by-laws regarding the issue which will meet with the requirements of the New York Stock Exchange, is being planned by a group of prominent New York and Philadelphia banking interests.



Nesco Sheets Show Big Increase

THE year just closed shows Nesco shipment of sheets greater than those of any other year. This record exceeds even those made during the banner year of 1923. It is significant that the increase of Nesco's business in Texas and the Southwest has been particularly striking. Mr. Lawrence F. Miller, general manager of sales of the Granite City Steel Works, producers of Nesco sheets, expressed the opinion that more advantageous shipping and delivery service from St. Louis to the Far West, Southwest and Central West is largely responsible for the increased Southwest business in Nesco sheets.



Model Houses for Display Use

MODEL houses, of a tough, durable paper mache material, are being distributed by the Morgan Sash & Door Company, Blue Island Avenue and Wood Street, Chicago. This company has arranged with a manufacturer to take his entire output of model houses and is able to offer them at a remarkably low price which makes them readily available for display windows, show rooms, building shows and similar advertising purposes. These models are about 3 feet long, are finished in four colors, and are accurate replicas of actual houses.

Illustrating the Comparative Hiding Power of Brushed and Sprayed Coats of Paint

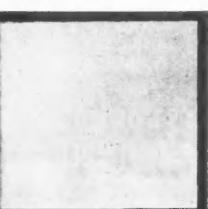
The hand brush puts on an uneven coating and the thin paint in the grooves wears away quickly. . . . The DeVilbiss Spray Gun applies a strong, even paint film that covers perfectly, that is durable and that wears down uniformly.

(Illustration shows same paint applied on identical surfaces — Photograph is unretouched and greatly reduced in size.)

One brushed coat



One sprayed coat





Residence of E. P. Williams, Easton, Pa. Built of Cinder Concrete Building Units. Photos show residence under construction and after completion. Architect, Paul Smith, Phillipsburg, N. J.; Contractor, E. P. Williams, Easton, Pa.



BUILD WITH CINDER CONCRETE BUILDING UNITS

STRAUB BLOCKS

BO PRODUCTS

**Cheaper Than Frame. No Masonry Equals Cinder
Concrete Building Units at Any Price**

THIS home is typical of thousands of buildings throughout the country in which Cinder Concrete Building Units have given the owner more advantages than any other form of masonry, yet with a saving over what he would have paid if the same house were built of frame construction.

The owner of a home built of this material can have only good words for its builder. This material always makes lasting friends of those who live with it, because of the low cost, comfort, safety, and high re-sale value which it makes possible.

Cinder Concrete Building Units are more fireproof than any other masonry. The most authoritative tests have proven that this material carries a higher proportion of unit strength into the wall than clay brick, concrete blocks, or blocks of solid masonry. Yet it holds nails as well as a spruce stud, and they can be pulled again without its crumbling or chipping.

It is an excellent insulator of heat and cold, and is sound-proof, damp-proof, frost-proof, sweat-proof, mold-proof, rot-proof. Its rough surface makes a perfect key for either plaster or stucco, requiring no furring or lathing.

Every architect, contractor and builder should know Cinder Concrete Building Units. Write for the address of the nearest of our 69 plants, which we invite you to inspect. Descriptive literature on request.

**Responsible parties will
be licensed to manu-
facture and sell in
open territory.**



Cinder Concrete Corporation
120 W. 42nd St., New York

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Paint Companies Combine

J. W. ROBSON, president of the Standard Varnish Works, 443 Fourth Avenue, New York City, announces that his firm has acquired the capital stock of Toch Brothers, Inc., and that both old concerns have been combined.

Henry M. Toch and Maximilian Toch assume important executive positions in the combined company. The manufacture of the Toch Brothers, Inc., products will be continued under the supervision of Dr. Maximilian Toch, together with Arthur D. Robson, vice-president in charge of operations of the Standard Varnish Works.

Architects Request Catalog to Replace Fire Loss

THE offices of the Harwood Beebe Company, municipal engineers and architects, at Ocala, Fla., were recently destroyed by fire and all the records, catalogs and other material in the company's files were lost. This company would be glad to have manufacturers supply them with new catalogs and samples as soon as possible in order that they may carry on their work without delay.

New J. H. Balmer Co. Plant

INCREASING business has necessitated additional facilities for manufacturing and shipping J. H. Balmer Company's Chinawyte "Easy-Set" bathroom fixtures.

Their building has recently been constructed at 105 Mulberry Street, Trenton, N. J., and beginning February 1, shipments will be made from this plant, with the exception of the metropolitan district, which will be supplied, as heretofore, from the Newark office.

Own Your Home Show Exhibits

THREE full size facades, showing various materials and products in the applied form, will be features of the Sixth Annual Chicago "Own Your Home" Exposition to be held in the Coliseum March 27th to April 3rd under the auspices of the Chicago Real Estate Board. These exhibits have been planned to get across to the exposition visitors the thought that homes are attractive and desirable. A real home is not merely four walls of even the most superior materials. Coloring, landscaping, garden walks, awnings, all combine with the materials used in construction, to make a charming picture. The most successful exhibits use "background."

An elaborate front elevation will be erected on the Coliseum floor by the Hydro-Stone Corporation and the Hawthorne Roofing Tile Company in the form of a Spanish bungalow with an elaborate garden arrangement. A second facade, having the appearance of the corner of a house, and elaborately landscaped, will be built by the Chicago Brick Exchange.

The Wisconsin Lime & Cement Company will feature a model house, built of Elastica stucco, and insulated by the Universal Gypsum Company. This house will be constructed by Robert Volk, who builds homes in Chicago and the suburbs for \$10.00 a month per room, nothing down.

A full size frame garage will be built on the exposition floor by the North West Side Lumber Company. A beautiful structure has been planned by the David Lupton's Sons Company, showing copper steel residence windows, casements and basement windows of various types, attractive finishes and methods of draping and screening. The Detroit Steel Products Company will build a section of a house in the old English style, showing a bay window, fitted with their "Fenestra" casement windows.



These HEAT WAVES show how the heat RISES and ESCAPES through the roof and walls of your house

That's what makes the snow melt so fast on your roof. Do you like to buy coal to melt snow? This is sheer waste, and you can stop it by insulating the roof and walls of your house with

CABOT'S Heat ~ "QUILT"

You can lay Quilt under your shingles, siding, tiles or boarding, or between your studs or rafters or under your attic floor. It will save enough coal to pay for itself in two or three winters, and keep on saving heat and doctor's bills and making you comfortable as long as the house stands.

Send for Free Sample of Quilt and full information



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Cabot's Cross-cut String, Waterproof Collapak, Old Virginia White, Double-White, etc.

Buy the Best HARDWARE For Hard-wear

For more than 48 years Bommer Spring Hinges have maintained their leadership and proven their superiority over all others.

They have kept pace with the times, because they have been kept up with the times whenever improvement was possible.

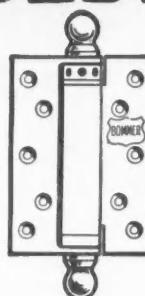
BOMMER SPRING HINGES ARE THE BEST

They are in universal demand—easiest to apply and the most satisfactory spring hinges made.

Your Dealer handles them.

Send for New Catalog 47. It is a big help in ordering.

Bommer Spring Hinge Company
MANUFACTURERS
BROOKLYN, N. Y.





Do you think of *Color* when you think of Floors?

The modern home owner wants more than a mere hardwood floor—he wants a hardwood floor that will harmonize with the color scheme of his walls or woodwork—his drapes or furniture.

“Color Harmony in Floors” is the possibility opened to you by the use of Maple, Beech or Birch, in residential construction. Maple, waxed or varnished, will give the golden color of sunlight; Beech or Birch will take and retain any color stain.

And yet, beauty is only one merit of these floorings. Each has a tough-fibred, tight-grained surface which is polished by the friction that pulverizes stone. For service or beauty, floor with Maple, Beech or Birch in any home, apartment, school, church, store, factory or public institution which you build.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1053 Stock Exchange Building, Chicago

Floor with Maple Beech or Birch

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Send for this book of interest to architects, contractors, builders, owners. “Color Harmony in Floors” will reveal new decorative possibilities to you. Write us and receive a copy with our compliments.

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain in the highest standards of manufacture, and ad-

here to manufacturing and grading rules which are economical to consumers, even partic-
ularly, to the use of these remarkable woods. This trademark is for your protection. Look for it on the flooring you use.

MFMA

Books, Bulletins and Catalogs for You

THE literature and publications listed here are available to readers of the American Builder. They may be obtained from the firms mentioned and will be forwarded without cost except where a price is noted.

Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y., has brought out a new catalog No. 46 covering its complete line of saws and other tools.

The International Harvester Company, 606 S. Michigan Ave., Chicago, offers two new booklets, "Equipment for Clubs, Parks and Golf Courses" and "McCormick-Deering Industrial Tractor and Operating Equipment."

Structural Materials Research Laboratories, 1951 W. Madison St., Chicago, has just issued its bulletin No. 17, "Studies of Bond Between Concrete and Steel," which is a report reprinted from the 1925 Proceedings of the American Society for Testing Materials.

The Portland Cement Association, 111 W. Washington St., Chicago, has published a new booklet under the title, "Portland Cement Stucco," which illustrates and describes modern wall finishes. The illustrations in color made directly from the wall finishes are particularly fine.

"**Brickwork in Italy**" is a new book published by the American Face Brick Association, 130 N. Wells St., Chicago. It is a very valuable and handsomely illustrated monograph on this subject covering a period from ancient to modern times. Price in cloth binding \$6, prepaid.

The Copper and Brass Research Association, 25 Broadway, New York City, offers a series of valuable booklets the titles of which are as follows: Copper and Bronze Are Cheaper, Real Roofings, A Real Home, Copper Roofings—A Manual, To Make a Good Car Better, Brass Pipe Plumbing for Your Home, Copper Flashings—A Handbook.

The Autocar Company, Ardmore, Pa., in addition to its

monthly publication, "Autocar Messenger," offers the following interesting booklets: Autocar Trucks for Hauling Merchandise, Autocar Dump Trucks, The Autocar Electric Truck.

"**Types of Dutch Architecture**," the monthly calendar pamphlet of the Ripolin Co., Cleveland, Ohio, illustrates for January the Castle Maurik.

"**Small House Designs**," collected and published by the Community Arts Association of Santa Barbara, Cal., and edited by Carleton Monroe Winslow and Edward Fisher Brown, has just appeared in a second edition, price \$1.50. The designs included were elected from those submitted in a competition for the best design of a house to cost not more than \$5,000.

McKeown Bros. Company, Inc., 112 W. Adams St., Chicago, Ill., have sent out an interesting pamphlet descriptive of the McKeown factory built, wood, bowstring turrets and accompanied by four service sheets of wood truss standards for the drafting room.

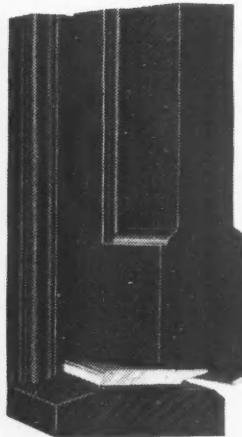
"**The Stick**" is a periodical bulletin, issued at irregular intervals by the Perkins Glue Company, Lansdale, Pa., presenting information of value to all who are interested in glue and its uses.

The American Walnut Manufacturers' Association, 616 S. Michigan Ave., Chicago, offers a new booklet entitled "American Walnut for Interior Woodwork and Paneling," containing very fine illustrations and valuable information on this use of walnut.

The Indiana Flooring Company, 234 Rider Ave., New York City, has issued another supplement to its catalog folder covering the subject of dance floors.

"**Good Practice in Construction**," by Philip G. Knobloch, Part Two, has been published by The Pencil Points Press, Inc., 19 E. 24th St., New York City, and is now ready for distribution. Price \$4.00.

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Every day more builders are doing weatherstrip work instead of subletting it to others. We sell you the material—you install it and make the weatherstrip contractors profit.

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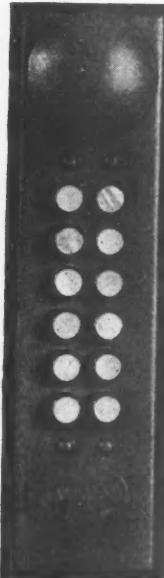
Gentlemen: Without obligation, please send me samples and literature.

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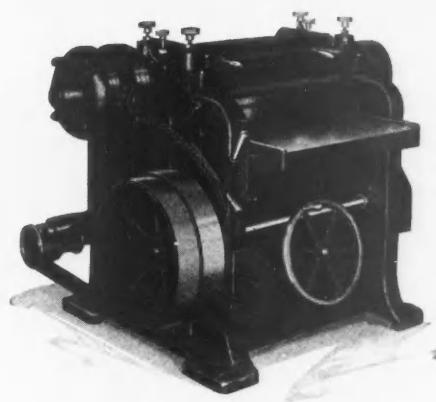
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WANTED—CONTRACTORS and AGENTS, to sell this lock in your own territory. BIG PROFITS, NO MIDDLEMAN. We ship direct from factory to you. Strictly a legitimate business proposition with a recognized firm, handling a Standard product.

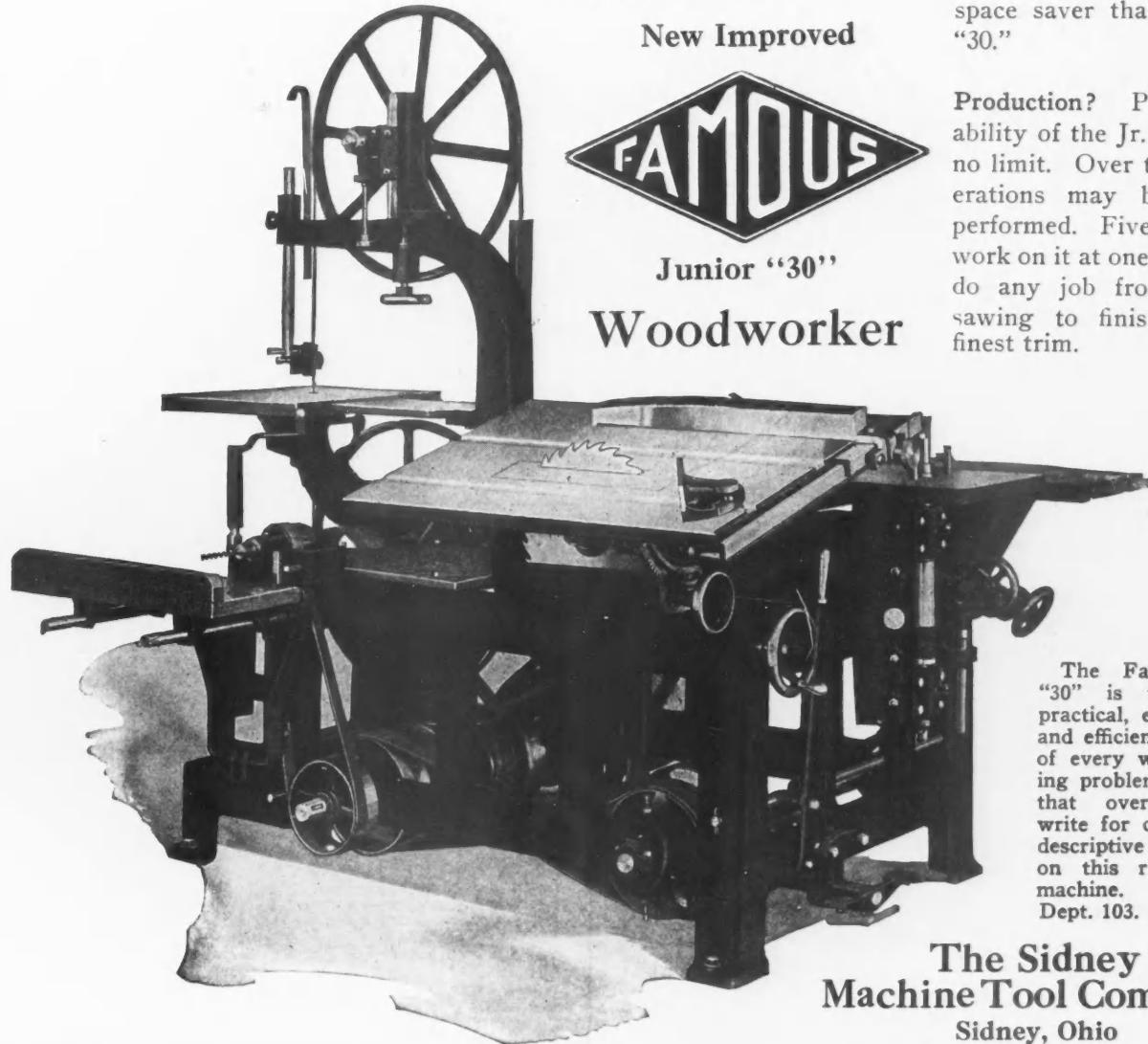
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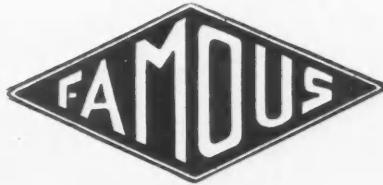
When you face the problem of selecting equipment four factors enter into the problem—first cost, upkeep, floor space and production. The Famous Jr. "30" Woodworker solves all four.

First Cost? Incorporating five machines in one—band saw, jointer, saw bench, shaper and boring machine, the Famous Jr. costs less than that of any two of them!

Upkeep? Operated by one motor, power consumption is less. There's nothing to wear out—no cross belts, short belts nor idlers. Labor need not be skilled to operate the Jr. "30"—another big saving in upkeep.

Floor Space? The Famous Jr. "30" occupies only 48 square feet—less than half that of the five machines it embodies. Where floor space is a premium, money cannot buy a bigger space saver than the Jr. "30."

New Improved



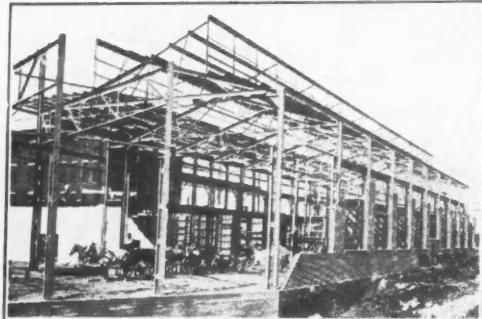
Junior "30"

Woodworker

Production? Productive ability of the Jr. "30" has no limit. Over thirty operations may be easily performed. Five men can work on it at one time and do any job from rough sawing to finishing the finest trim.

The Famous Jr. "30" is the most practical, economical and efficient solution of every woodworking problem. Think that over! Then write for completely descriptive bulletin on this remarkable machine. Address Dept. 103.

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Elevators,

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Write for circular containing over fifty garage illustrations.

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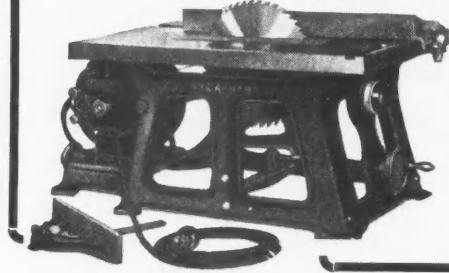
Indiana

**Co-Wa-Co Integral Concrete
Waterproofing Compound**

In recent tests by Columbia University Co-Wa-Co withstood the permeability test at thirty lbs. to the square inch. One thousand degrees Fahrenheit could not destroy the compound. Co-Wa-Co increases the tensile and compressive strength of concrete. Co-Wa-Co's basic materials are of a neutral insoluble nature.

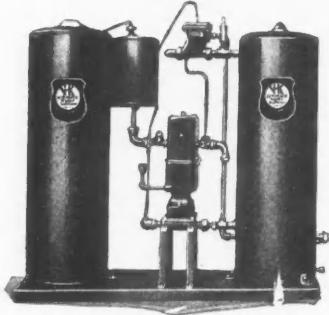
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This is our No. 8 Bench Rip Saw. Will rip or cross-cut material up to 2½ inches thick. It operates from any light socket and weighs but 125 lbs. complete. Write for circular on the complete H & A line of rip, band and swing saws.

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**AUTOMATIC
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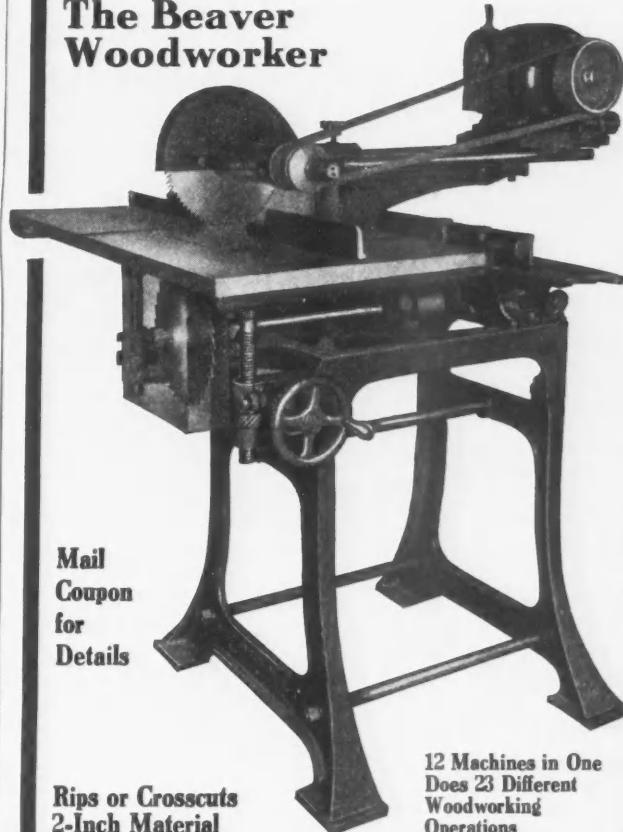
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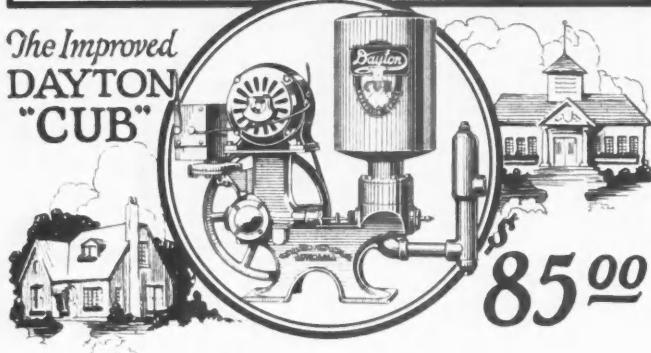
To HUTCHINSON MFG. CO., Norristown, Pa.
Please send full particulars on your woodworkers. I am particularly
interested in the machine I have checked below.

The Speed Marvel with 3 H. P. Motor.
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Get this!

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Four plumb vials and two level vials make this tool always ready for contact with the work—no matter how you pick it up.

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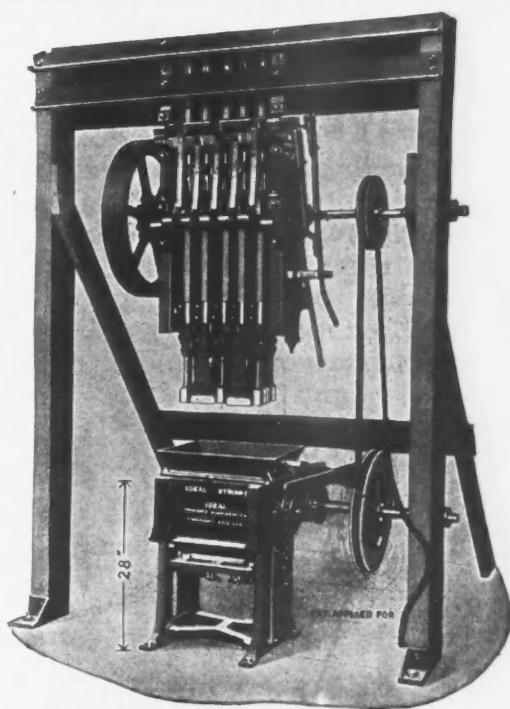
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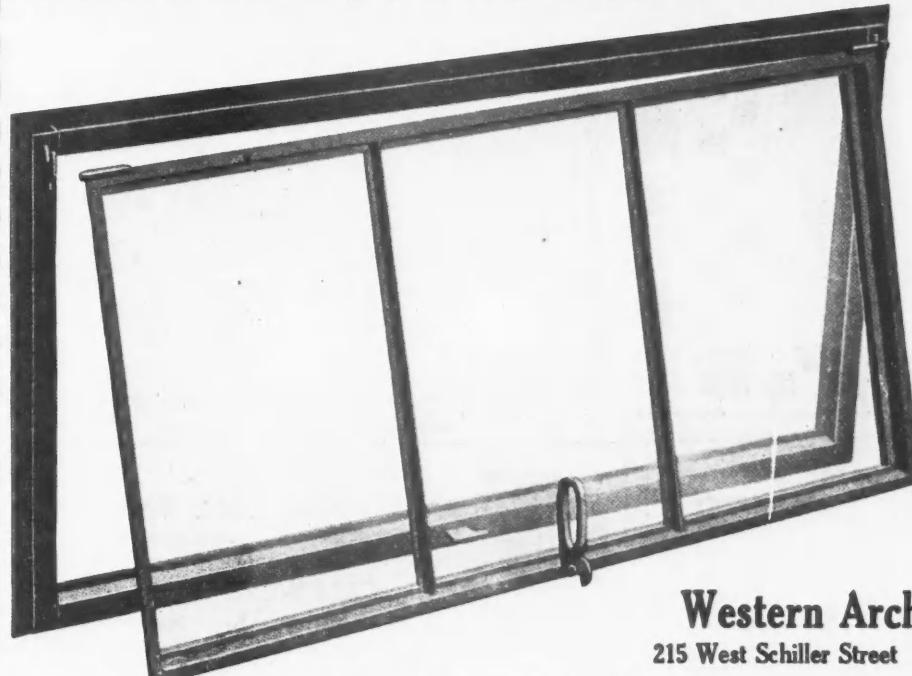
*Ask for details—and let
us explain, too, about the*

IDEAL POWER ROLL-OVER

a mechanically perfect machine that produces square, true Block most economically. Just one machine—the Vertical Stripper or the Roll-Over—does the work of two ordinary machines. Either makes classy Block or classy Tile. No extra pallets necessary on the Roll-Over.



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Western Architectural Iron Co.
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We believe you will pick a Stewart when you have all the facts—There's a lot to tell you that we can't put in an ad. Where'll we send it?

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Roof Faster With **CYCLONES**

Only 72 shingles and
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That means speed.

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For cutting all
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The wonderful colorings of natural slate gives a charming and delightful effect to the Porch Floor, Garden Walk or Sun Parlor.

Provides the distinctive finishing touch of color to the interior or exterior floor or the informality necessary for Landscape and Rustic Walks.

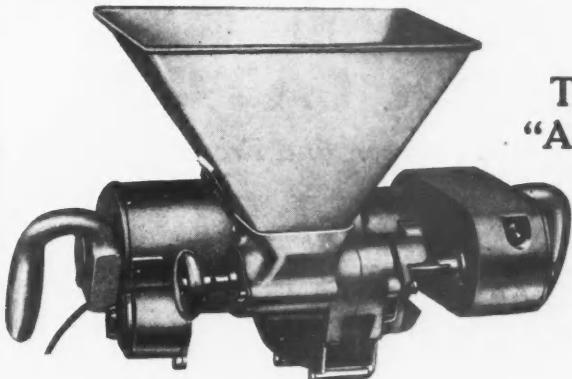
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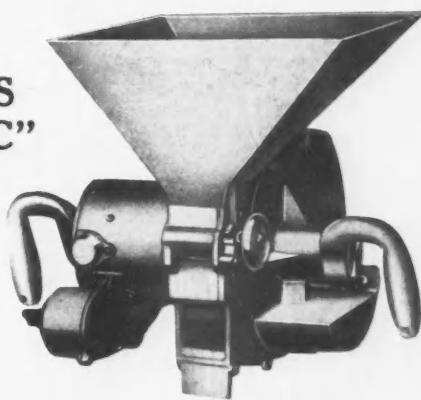
You cannot afford to be without these machines because they make large profits on all jobs.

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"DASH BY AIR"



This machine dashes on the Dry Pebble Dash with constant force and speed. It produces beautiful surfaces which cannot be attained by hand.

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Build and Sell Homes In the Suburbs Now —Don't Wait for Sewers

"Out to the suburbs," is now the nation-wide cry. The city dwellers want plenty of lawn, green grass, garden, orchard, sunshine and blue sky. Folks are tired of living where they daily toil for their bread and butter.

People realize that it is not necessary to live in the city nowadays just for the sake of city comforts and conveniences. Modern homes with sanitary plumbing are now easily procured anywhere.

The problem of sewage disposal is perfectly solved with the safe, modern, economical

San-Equip Septic Tanks

for all unsewered districts. Don't let lack of sewers worry you.

San Equip Septic Tanks follow U. S. Public Health Service design. Thousands are in use. No failures. Fully guaranteed. Easily installed.



Write for Our Free Plan Sheets

Sell San Equip Septics with the lot or use our free plan sheets to help you sell. Our advertising is telling more than half your prospective home buyers about the San Equip idea of sewage disposal.

San Equip Septic Tanks are rust-proofed copperoid iron tanks—correct design—water tight—unbreakable—ready to connect.

Look one over at our risk. Prompt shipment from warehouse near you.

CHEMICAL TOILET CORPORATION
76-80 FREE STREET, SYRACUSE, N. Y.



DEXTER TUBULAR LATCHES

for Cupboard, Screen and French Doors

3 UNEQUALLED ADVANTAGES

1. **Greatest Economy**—though they set into the door they can be installed by an ordinary handy man in a quarter of the time a skilled mechanic requires to put in a mortised latch—at about $1/5$ the cost.
2. **Absolutely Trouble Proof**—they consist of only three substantial working parts which are practically indestructible and cannot get out of order.
3. **Exceptional Attractiveness**—beautifully designed, handsomely finished, always perfectly installed.

Inspect them at your dealer's or write us direct.

NATIONAL BRASS CO.

1601-09 Madison Ave.
GRAND RAPIDS, MICH.

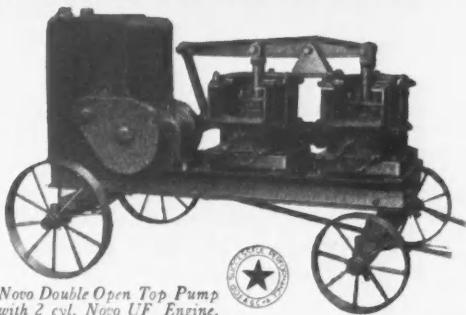


Powered with Novo 1½, 2, 3, 4 H.P. single cylinder and 3-6 H.P. two cylinder gasoline engines.

Independent reducing gear on two cylinder engine unit. Oil tight and dirt proof. Oil automatically fed to bearings. Cleanout and drain in pump base. Machine cut gears in bath of oil.

Double threaded discharge flange. Specially made diaphragm outlasts several ordinary diaphragms.

Other features, all illustrated and described in Data Sheets Nos. 99 and 105.



Novo Double Open Top Pump
with 2 cyl. Novo UF Engine.

60 Well-Points

LAWRENCE MASSA, pipe line contractor of Huntington Park, California, has three Novo Diaphragm Pumps. Two of them are shown in the picture at the left.

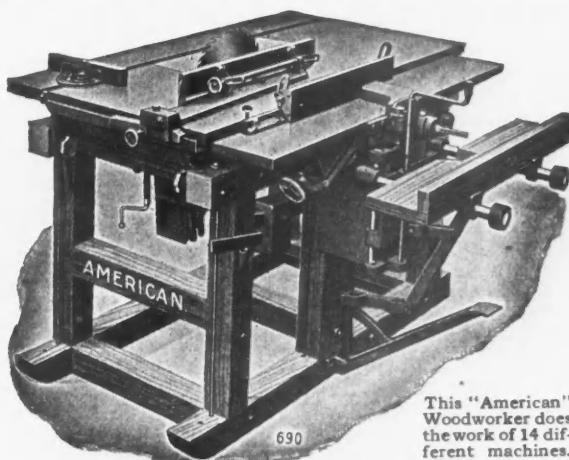
One Novo is connected to a string of 60 well-points. As trench excavation went forward, a section of the 4-inch main was disconnected at one end, brought forward and again connected. The Novo pump was not stopped and operations continued without interruption.

Mr. Massa has recently purchased the third Novo pump, a double open top unit. He says, "It proved to be the best of any I have used. It is a steady pumper, always ready for work. I am well satisfied with it."

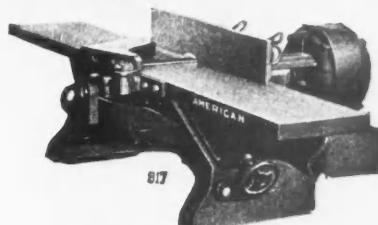
Novo Diaphragm Pumps, single and double, open and closed tops, have many advantages not found in other makes of pumps. Some of these are listed at left.

Write for Complete Details

NOVO ENGINE CO.
Clarence E. Bement, Vice-Pres. & Gen. Mgr.
LANSING
MICHIGAN



This "American" Woodworker does the work of 14 different machines.



American Bench Jointer

AMERICAN SAW MILL MACHINERY CO.

MAKERS OF WOODWORKING AND SAW MILL MACHINERY
60 MAIN STREET

HACKETTSTOWN, N. J.

**Eats the work—
that eats the profits
Leaves more "velvet" for you**

This American Portable Variety Woodworker is a complete woodworking shop in itself—a shop that you can take right with you on a job. It may be used as a rip or cut-off saw, as a dado, gaining, grooving, rabbeting, tenoning or boring machine, as a jointer or planer, a matcher, molder or sander, and as a hollow chisel mortiser. A scroll saw attachment may also be included.

Send the coupon for Bulletin No. 81 which describes both the Woodworker and Bench Jointer illustrated on this page as well as many other cost-cutting "American" machines.

Mail this coupon today

The American Saw Mill Machinery Co.
60 Main St., Hackettstown, N. J.

Gentlemen:

I am interested in the machinery described in your Bulletin No. 81. Please mail me a copy at once.

Name

Address

City, State

*-for
simple
accuracy -*



*Builder's Convertible
Y Level No. 6380*

This instrument, due to its convertible feature can be used as a transit for obtaining vertical lines and for sighting objects above or below a horizontal plane. To use as a level, it is only necessary to unscrew the trunnions and place the telescope in the Wyes.



*Builder's Dumpy
Level No. 6370*

For the builder who recognizes the value of proper equipment—the value of accuracy—for the man who takes pride in his work—who is efficient—who sees beyond the present job—

Dietzgen Builder's Level

Dietzgen Lev. Is have been accepted as standard for many years. The name is only seen on instruments that are reliable, accurate and that have the House of Dietzgen back of them.

Purchase from your dealer, or write direct for complete descriptive literature.

EUGENE DIETZGEN CO.

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Drawing, Surveying, Mathematical Instruments & Materials, Measuring Tapes

THE "PANAMA" LINE



IS THE SHORTCUT

To bigger profits through a greater day's work with less labor. All the way from a large batch mixer with side loader or platform down to the small hand power mixer there is that high quality of material, workmanship and performance which has typified the Panama Line for years.

Panama Mixers assure a more uniform mix and in time, labor and money quickly save their cost.

Write for the Panama Catalog and learn more of this profitable line of quality mixers. Also on Panama Concrete Block Machinery.

THE J. B. FOOTE FOUNDRY CO.

Established 22 Years

14 FRONT STREET

FREDERICKTOWN, OHIO



METTOWEE STONE PAVING

is aptly suggestive of the charm of natural environment.

Soft variegated colors and natural cleft surface is a delightful contrast to plain, ordinary flagging or concrete.

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VENDOR SLATE CO.
INCORPORATED
EASTON, PENNSYLVANIA



Pays for Itself in 60 Days —Lasts 10 to 20 Years!

"Your instrument has already paid for itself,"—is the enthusiastic response we receive from many contractors and builders, after they have used a Beckmann instrument for 60 days.

But that is only the beginning.

With ordinary care it will continue to *save you hundreds of dollars yearly for 10 to 20 years.*

Get rid of chalk, square, straight-edge and ordinary level,—that time wasting and labor wasting method of laying out angles and leveling foundations. A Beckmann instrument will do all such jobs in *one tenth of the time.*

Simple to operate; so reasonable in price that you can't afford to be without one,—and *10 days' free trial* for you to convince yourself.

The L. Beckmann Co.

503 Adams Street
Toledo, Ohio



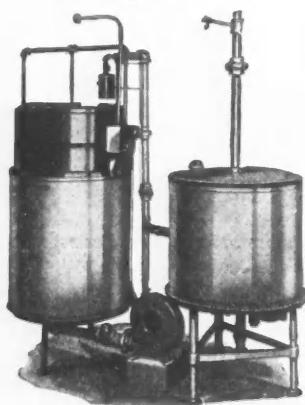
Just mail the coupon—no obligation to you.

TEAR OFF HERE **SIGN AND MAIL TODAY**
The L. Beckmann Co.
503 Adams Street, Toledo, O.
Gentlemen: Please send free of charge, your 80-page catalog, with
price list and full details of your free trial offer.
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Gas is the most essential modern convenience that you can place in your country home. It makes the pleasure of living in the country complete.

The Detroit Suburban Gas Plant provides every luxury that gas furnishes. It will make gas of uniform pressure to cook your meals, heat your water and warm and light your rooms—It will make you independent of city gas.



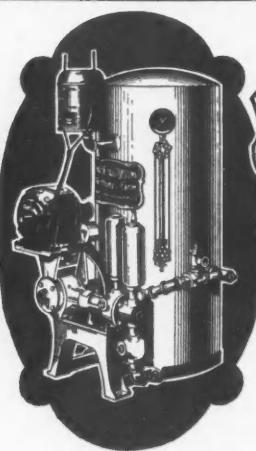
Simple in Construction and Operation

operation. Detroit Suburban Gas plants for more than 50 years have served thousands of homes and institutions. Built in seven sizes to meet every requirement.

Our engineering service, to make suggestions and furnish concrete recommendations, is without charge.

Write for our new Catalog "Detroit Suburban Gas Service". It tells the complete story.

DETROIT SUBURBAN GAS PLANT CO.
2155 Milwaukee Ave. East Detroit, Michigan



Paul
WATER
SYSTEMS

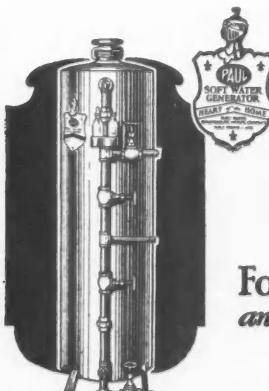
for Farm, Home
and Lake Cottage
Deep or Shallow
Well

THE best proof that any product is satisfying the consumer is steadily increasing sales over a long period of years. That's what Paul records show. For more than 20 years, Paul Home Helpers have maintained a reputation for the highest type of dependability, and sales have mounted year after year. Paul Private Water Systems and the Paul Soft Water Generator are products of 20 years of engineering experience in this highly specialized field.

Sales Tell The Story

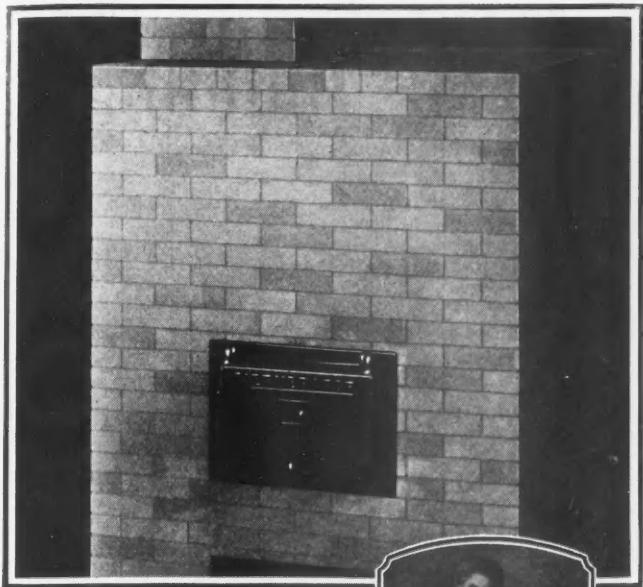
The favorably known Paul Water Systems for farm and home find ready sales wherever isolated farms or suburban homes or lake cottages need safe and certain water supply.

*Write for more information
about the rightly priced
Paul Equipment.*



Paul
SOFT WATER
GENERATOR

Fort Wayne Engineering
and Manufacturing Co.
1713 N. HARRISON ST.
FORT WAYNE ~ IND.



Eight Times We Changed This Door—

IN pioneering flue-fed incineration, 15 years ago, the Kerner Incinerator Co. was forced to turn, for data, to the pitiless crucible of actual usage. Little was known of such factors as moisture content, smoke, draft and flame control, air movement, gas distillation.

One by one, this organization faced and settled these problems, scientifically—exactly. Typical of the painstaking route traveled toward perfect dimensioning of each part of the Kernerator, is the effort expended in making the door shown above precisely right in width, height, weight, slant and positioning.

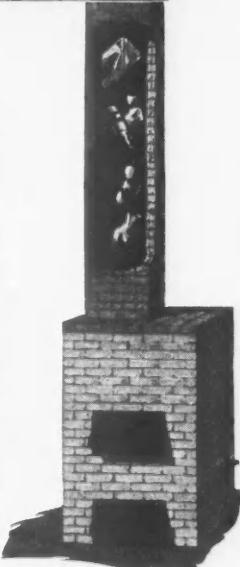
Eight times we changed this door. Foolish? Not a bit of it! Such care is the big reason why the Kernerator works—always. Such care is responsible for the famous, patented Kernerator By-Pass, without which satisfactory flue-fed incineration is impossible.

The Kernerator is positively guaranteed to handle all waste—not only garbage, but sweepings, tin cans, broken glass, papers, magazines, household rubbish of every kind. Metallic objects, such as tin cans and the like, are flame-sterilized for removal with the ashes. IT COSTS NOTHING TO OPERATE—NO FUEL IS USED—THE WASTE ITSELF IS FUEL FOR ITS OWN DESTRUCTION. The illustration shows how it is built in and how it operates.

See Sweet's (1925) pages 2800-01. For additional information phone your local Kernerator representative (25 of whom are listed in the telephone directories of that number of principal cities) or write—

KERNER INCINERATOR COMPANY, 753 East Water Street
MILWAUKEE WISCONSIN

KERNERATOR
Built-in-the-Chimney
Reg. U. S. Patent Office
Garbage and Waste Disposal
without Leaving the Kitchen



The Kernerator costs no more than a good radio—and the radio can be added any time, while the Kernerator must be built in.



WHEN a fire alarm rings somebody is losing money. The source of loss is sought immediately and eliminated as quickly as possible.

Whenever you hear a hand hammer pounding a star drill, a cold chisel, a stone point, or a bushing tool on any of your jobs, it means that YOU are losing money.

You're paying ten times too much for every hole you drill, and for every foot of concrete you chip or channel, using a hand hammer.

Now that you know the source of loss—stop it!

SYNTRON Electric Hammer

THE TOOL OF A HUNDRED USES

Strikes 3600 blows and drills 3 inches into concrete a minute. Saves 90% on many operations because it chips or channels as fast as ten men. Here are a few places where SYNTRON will save for you:—chipping for plumbing lines; cutting new doorways; fitting steel sash; roughing up; removing board marks from concrete; cleaning bricks; installing stair treads; putting up fire escapes, or wire conduits, etc., etc. Try it on your next job.

Syntron gives you an advantage over your competitor if he doesn't own one, or prevents him from under-bidding you if he does have one.

Syntron pays for itself in 40 hours' use. Send for our convenient purchase plan.



----- MAIL THIS COUPON -----

National Electric Mfg. Co.

324 Chatfield-Woods Bldg., Pittsburgh, Pa.

Tell us how we can save money by using SYNTRON. Also send free copy of your magazine, "The Syntron"

Name _____

Firm _____

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Business _____

How You Can Profit More From This Spring's Remodeling and Building

Spring is the time for you to reap your harvest of profits.

It is the time when thousands of Everlasbestos representatives make the most money—when you, too, can substantially increase your business and income by laying this composition flooring.

Many Everlasbestos Prospects

There will be much remodeling and building the coming months. In your territory there are now many prospects for Everlasbestos to be put down in stores—offices—churches—hospitals—schools

—theatres—public buildings—in the kitchens, bathrooms and sun porches of homes and apartments—in the washrooms and restaurants of factories.

Easy to Lay Perfect Job

Any man who can use a trowel can lay a perfect Everlasbestos floor that pleases your customers and brings you more jobs from their friends.

Smooth, seamless, clean, evenly colored, handsome in appearance—this flooring still looks like new after ten and fifteen years of hard service.

Highest Quality Ingredients

And Everlasbestos wears just as long and looks just as good laid over old floors as in new buildings. The unusually high quality of its ingredients and perfected formula assure permanent usefulness and perfect satisfaction. Colors are red, buff, gray and green.

Our easily understood illustrated Manual of Instructions makes laying Everlasbestos easy—it's free with order.

Profit more from this spring's remodeling and building. Write now for catalog and free sample on wood.

Everlasbestos Flooring Co.
DEPT. B, 95 NORTH ST., ROCHESTER, N. Y.



Everlasbestos
Flooring

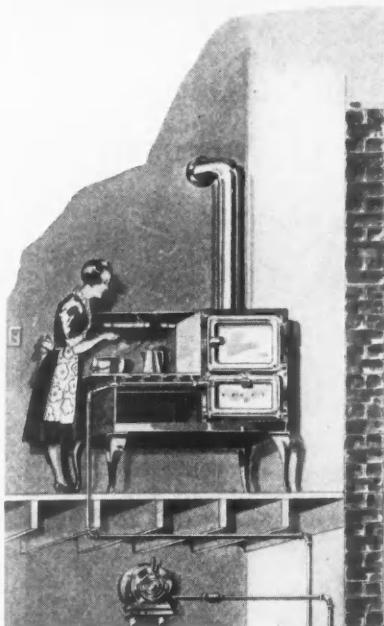
There's more profit in a HUTHER SAW



Backed by fifty years experience in the making of highest grade saws, each Huther Saw has a quality built into it that insures maximum length of service.

Huther Bros. Saw Mfg. Co.
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Makers of Better Saws for More Than Fifty Years



Individual
HOME
GAS
PLANT
for
COOKING
and
HEATING

Uses Gasoline
*Absolutely
SAFE!*

Taylor Individual Gas Plant uses only gasoline, everywhere available. Absolutely fool-proof, positively safe. Nothing can go wrong. Class "A" insurance.

TROUBLE FREE
*Requires
no attention*

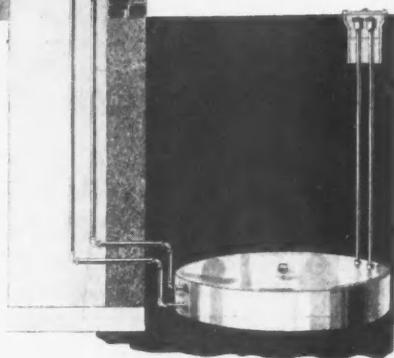
Nothing can get out of order. Never needs repairs or adjustments. Just fill tank through ground intake outdoors, and whole system automatically takes care of itself.

CLEAN - CONVENIENT
*Cheaper
than city gas*

Produces 500 feet of gas per hour, testing 900 B. T. U. (average city gas tests only 500 B. T. U.) Average range uses 40 feet of gas per hour. Based on average cost of gasoline, Taylor Individual Gas Plant costs only 50 cents to 65 cents *per thousand feet*. (City gas costs average of \$1.00.) One tankful lasts 4 to 8 months. Same benefits as city at less cost. Clean. No smoke. No odors. Just turn on at stove.

EASY TO INSTALL
Anyone can put in a Taylor Individual Gas Plant. No special knowledge or experience needed. Requires little time. Once in, serves a lifetime.

COMES COMPLETE
Low price to contractors and builders *includes everything*. No complicated valves or machinery. Find out about this now.



**MONEY
MAKER**
**for suburban,
small town and
country builders**

Every user of an oil stove, wood range or coal furnace is a prospect for the Taylor Individual Gas Plant. All the cooking and heating comforts and conveniences of the city at *less expense* than city gas. Costs little to buy (terms, if you like). Quickly and easily installed. *Big profits for you.* Put a gas plant in every home you build. In hotels, summer cottages, every house in town and country. Delighted users tell their friends.

**Send Today For The
TAYLOR Proposition**

Get our proposition by return mail. Here's a chance for *Big Money* right in your locality. Start with the home-owners who already know you. One sells another. Our terms are all in your favor. Find out now. Write to

TAYLOR GAS PLANT CORPORATION
10 East Huron Street CHICAGO

TAYLOR
INDIVIDUAL GAS PLANTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

STEEL JOISTS



For every type
of light occupancy building
Economical - Practical - Dependable

CUT your time costs and make profitable savings in materials by using these GF Steel Joists. You can give the owner a thoroughly dependable, rigid and fire-safe floor construction with GF Steel Joists at very low cost. You can use them in homes, hotels, apartments, office buildings, and any other light-occupancy structures.

Remember, you don't have to build up and tear down centering or other false work and you don't have to cut Steel Joists. Field labor is reduced to the minimum. No expensive equipment is necessary. For your own profit, and the owner's, use GF Steel Joists.

GF Steel Joists
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THE GENERAL FIRE-PROOFING BUILDING PRODUCTS
Youngstown, Ohio

Please send me full information on GF Steel Joists.

Name _____

Address _____ DM _____



AMERICAN WINDOW GLASS CO.
PITTSBURGH, PA. U.S.A.

Large, Airy Windows Make Better Bedrooms

BIG windows and lots of them in the bedroom provide the outdoor air that promotes better sleep and rest. Sunlight means better sanitation, fewer breeding places for germs and vermin.

Give the glazing of the house, barn or garage you build a great deal of thought. Do not be satisfied until you are assured in your own mind that you will provide the maximum in window openings and glazing and also in the glazing of doors, book cases and china cabinets.

There is greater beauty, greater satisfaction and much less ultimate expense in "The BEST Glass." It is stronger, flatter and remarkably free of defects. Yet it costs no more than the ordinary kind.

AMERICAN WINDOW GLASS CO.

The BEST Glass World's Largest Producer of Window Glass **The BEST Glass**
GENERAL OFFICES: PITTSBURGH, PA. BRANCHES IN PRINCIPAL CITIES



Concrete Mixers

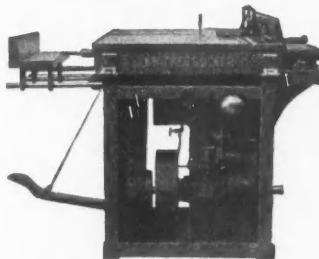
Built in 5, 7, 10, 14, 21 and 28 ft. sizes. Every machine ready to prove its value on your own work. Weight where weight is needed—not an unnecessary ounce anywhere—Knickerbocker the UNSKIMPED mixer.

KNICKERBOCKER Contractors' Equipment

Built for discerning contractors who keep an eye on operating and repair costs, as well as on purchase price.

Ask for our new catalog.

THE KNICKERBOCKER COMPANY
525 Liberty Street JACKSON, MICHIGAN



Combination Saw Rig

No. 424, shown above, has stationary arbor, with jointer, boring and mortising attachment. No. 5, a heavier model, is a swing cut-off and ripping machine.



Mortar and Plaster Mixer

Cut your payroll, increase the output of masons and plasterers, save 20% on lime, in color work save 20% color. Large machine serves 75 masons or 35 plasterers—smaller model keeps 30 masons or 15 plasterers "on the hump."



How to Make Sheet Metal Work Last Longer

That's simple. Pass up ordinary sheet steel in favor of Inland Copper Alloy Steel Sheets. Here you have protection against corrosion and rust not only on the outside of the sheet but all the way through.

Tests and usage prove that Inland Copper Alloy Sheets last several times longer. Yet these superior sheets cost surprisingly little more than ordinary sheets. Thus the added cost on any job is negligible.

You can build a lot of extra good will for yourself by recommending and using these durable sheets. Descriptive circular upon request.

INLAND COPPER ALLOY STEEL SHEETS

INLAND STEEL COMPANY

38 South Dearborn Street, Chicago

Branch Offices: Milwaukee
St. Paul, St. Louis
Kansas City, Mo.

Mills: Indiana Harbor, Ind.
Chicago Heights, Ill.
Milwaukee, Wis.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Home at Bexley, Columbus, Ohio, built by William Ireland, has 24" Gray WEATHERBEST Stained Shingles on Side-walls laid with 10" exposure and 18" WEATHERBEST Stained Shingles in Variegated Green shades on roof.



How to Make Small Homes More Attractive

Good design is not enough. The proper selection of material is of first importance. WEATHERBEST Stained Shingles lend themselves to present-day small homes with their many angles and dormers that come from the effort to secure good lines and use all available space. On sidewalls, WEATHERBEST Stained Shingles in 16" length laid with 7½" exposure or in 24" length laid with 10" or 11½" exposure give charming effects in shades of gray, brown or in WEATHERBEST Colonial White. Roofs can be in solid tones or in variegated shades of green, brown or red to harmonize.

WEATHERBEST Stained Shingles will last for a lifetime on roofs or sidewalls and as colors grow mellow with age, future upkeep expense is reduced to a minimum. WEATHERBESTS are made only of 100% edge-grain, red cedar shingles and are preserved against wind and weather by our WEATHERBEST process of carrying color pigments and creosote preservative into the pores of each shingle.

Write for free set of color photogravures showing different WEATHERBEST Homes in a variety of treatment. Ask for set of color samples. If you will give names of your Lumber Dealer and Architect, we will see that they are also supplied with information.

WEATHERBEST STAINED SHINGLE CO., INC.
112 Main St., North Tonawanda, N. Y.

Western Plant—Minnesota Transfer, Minn.
Distributing Warehouses in Leading Centers



Valuable book on
Reshingling and
Modernizing of
Houses.



**Weatherbest
STAINED-SHINGLES
FOR ROOFS AND SIDE-WALLS**

Weatherbest Stained Shingle Co., Inc.
112 Main St., North Tonawanda, N. Y.

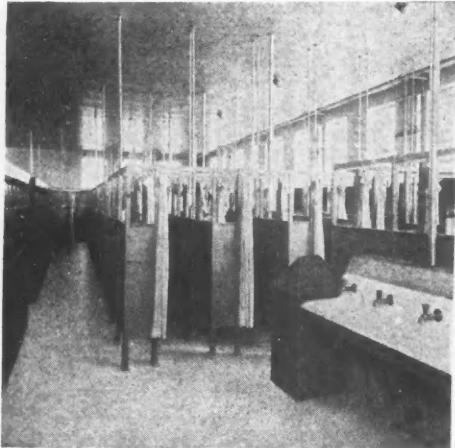
Please send WEATHERBEST Color Photogravures, Color Samples and literature showing lower cost of WEATHERBEST Sidewalls.

Book on Modernizing and Reshingling

Name.....

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WEISTEEL
TRADE MARK
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Dominant Weisteele Superiority Features

1. 16 gauge, Keystone copper-bearing, rust-resisting, furniture steel.
2. Weisteele special-design universal hinges, simple, fool-proof, durable.
3. Weisteele doors are electrically welded into one solid unit. Foot castings are brass. Brass latch and pull are nickel plated.
4. All joints are closed and sealed. No flat surfaces to catch and hold dirt.
5. Pleasing yet practical designs harmonize with other quality equipment.
6. Weisteele Cooperative Plan saves you time and cost.

Weisteele Cooperative Plan

From rough layout of toilet room indicating plumbing connections and requirements, we make up complete plans and specifications. These are sent you with quotations if desired. It is easy to order Weisteele for any job.

With shipment goes an installation diagram and complete erection instructions indexed to numbers on compartment sections. No fitting, cutting or drilling is necessary in erecting Weisteele and mistakes are virtually impossible.

Installations are quick and easy, saving your time and the cost of specialized labor.

More Architects specify Weisteele Compartments than any other make.

WEISTEEL
TRADE MARK
REG. U. S. PAT. OFF.
COMPARTMENTS

Toilet and
Shower
Compartments

HENRY WEBB MANUFACTURING CO.
ATCHISON, KANSAS

Branch Offices:
NEW YORK CHICAGO
LOS ANGELES BOSTON
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Representatives in All Principal Cities

Dressing Room
Furniture
Hospital
Cots



This is a Rocbond home in Hot Springs, Ark.—No. 531 of a series of 10,000 superfine Rocbond jobs.

If it's to be Stucco—

Use Rocbond!

There isn't any better stucco than Rocbond no matter how much you pay.

When it's applied to a structure that's honestly built—applied as provided in our simple specifications, the result will be a job with no flaws—a job that's *crackless* and *permanent*.

Rocbond lends itself readily to any surface texture, color or color combination.

Use it on your next job and be convinced.

The Rocbond Co.

Van Wert, Ohio Harrisburg, Pa.
Cedar Rapids, Iowa

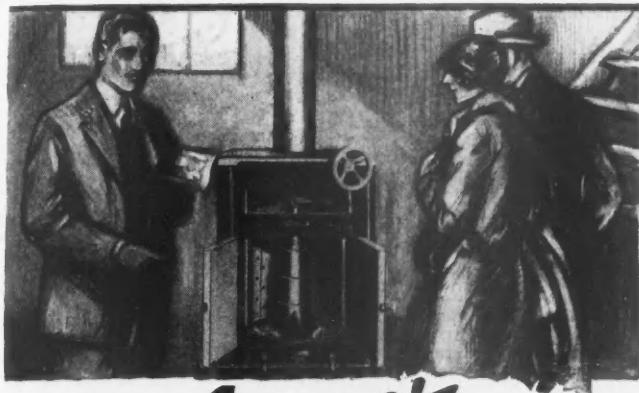
* * * * *



Hagerty Says

Retail building supply dealers who are not handling Rocbond are surely missing a big opportunity.

ROC BOND
Exterior Stucco



Amherst Incinerators -help sell homes

The way competition is nowadays, it's the extra modern conveniences in a home that tip the scales of a buyer's decision. Any woman who knows the unsanitary inconveniences of the old garbage pail will appreciate the value of a home where modern methods dispose of refuse in an easy, efficient way.

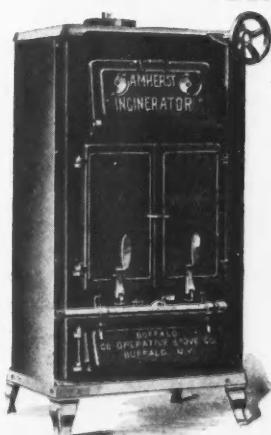
The Amherst Incinerator is the climax in sanitary garbage disposal. Odorless, fumeless, as clean as a shining stove, it saves all the trouble and worry of odors, germs and vermin that accompanied the ancient garbage can.

Can be burned once or twice a week as soon as it becomes full, or every day if desired. User lights the gas and forgets it. When the charge is reduced to a fine ash, the gas shuts off automatically. The strictly modern home demands this health-protecting labor saver. Write for booklet now.

We also make incinerators for Hospitals, Apartment Houses and Factories. See Sweet's Catalog, page 2796.

BUFFALO CO-OPERATIVE STOVE CO.

Manufacturers of the largest line of Incinerators in the world
BUFFALO, N. Y.



Distributors:

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George A. Rawlings, Arcade Building,
St. Louis, Mo.
C. P. Helpman, 722 Story Building,
Los Angeles, Calif.
S. Howard Eisenberg, 608 Empire
Building, Denver, Colo.
Utah Gas & Coke Co., Salt Lake
City, Utah.
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AVAILABLE TERRITORY
OPEN



Salary increased 300% in few months

Chief draftsman of big company received big increase even before he had completed his course with the I. C. S.

"AT THE time I started my I. C. S. course I was working in a paper mill," writes A. J. Hutchins, Chief Draftsman for the American Strawboard Co.

"Before I had completed the course I was called upon to make drawings in one of the company's largest mills and was appointed Superintendent of Construction at an increase in salary of 300 per cent."

Every mail brings letters from students of the International Correspondence Schools telling of increases in salary due to spare-time study.

Why don't *you* study, too, and prepare for a real job at a real salary? You can do it if you really try.

Just mark and mail the coupon and we will send you complete information about the I. C. S. Drafting courses or any other course in which you are interested.

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<input type="checkbox"/> Reading Architects' Blue Prints	<input type="checkbox"/> ADVERTISING	
<input type="checkbox"/> Contractor and Builder	<input type="checkbox"/> Window Trimmer	
<input type="checkbox"/> Building Foreman	<input type="checkbox"/> Show Card, Sign Painting	
<input type="checkbox"/> Concrete Builder	<input type="checkbox"/> BUSINESS MANAGEMENT	
<input type="checkbox"/> Structural Engineer	<input type="checkbox"/> Private Secretary	
<input type="checkbox"/> Structural Draftsman	<input type="checkbox"/> Business Correspondent	
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<input type="checkbox"/> Mechanical Draftsman	<input type="checkbox"/> Textile Overseer or Supt.	
<input type="checkbox"/> Machine Shop Practice	<input type="checkbox"/> TRAFFIC MANAGER	
<input type="checkbox"/> STATIONARY ENGINEER	<input type="checkbox"/> AUTOMOBILES	<input type="checkbox"/> Spanish
<input type="checkbox"/> CHEMIST	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> French
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SKY LIGHTS and VENTILATORS

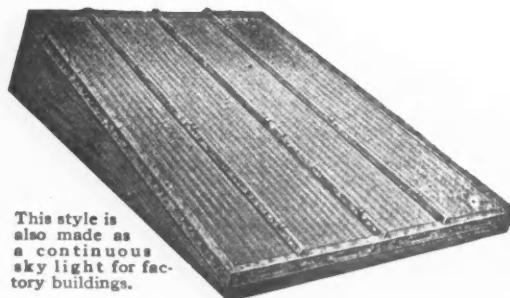


Side sashes operated in batteries. Pivoted to afford easy control.

Low Installation Cost

One of the factors that have made Willis skylights and ventilators popular with contractors and builders is low cost of installation. Built to exact specification they require no fitting and can be erected with a minimum amount of labor in short time.

Along with savings in cost and installation Willis skylights and ventilators give the sort of service and satisfaction that pleases every user. You never need worry about a come-back when you specify Willis products on any job.



This style is also made as a continuous sky light for factory buildings.

Write for the Willis Catalog of sheet metal products. It opens a new field for profit in the building trades.

WILLIS MANUFACTURING CO.
GALESBURG, ILL.

Check Over These Three Salient Features

A check over of these three outstanding points will prove to you why Reading Cut Nails are used exclusively on work which depends on the grip of the nail:



Strength of Head

No matter how it is driven, the head of a Reading Cut Nail stays on, and sinks firmly into the wood.

Holding Power

Government tests in all kinds of work have definitely proven that the old-fashioned cut nail has 72% greater holding power than the round wire nail.

Will Not Split the Board

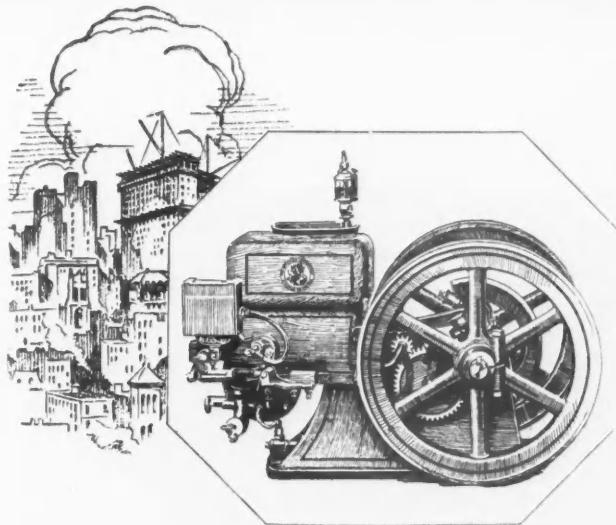
Reading Cut Nails grip the wood at every point, while wire nails hold only by surface friction. They cut their way into the board, spreading the wood with the grain, but not across it. Consequently they don't split the wood.

Contractors are using Reading Cut Nails in large quantities for flooring, framing, sheathing, siding and shingling. This demand is ever increasing as the knowledge of their value spreads. Keep all sizes in stock.

Send for quotations

READING IRON COMPANY
Reading, Penna.

**READING
CUT NAILS**



Rely Upon the Powerful, Economical Hercules

You'll have less engine trouble if you have a Hercules. You'll get the power you need and must have to finish the job on time **without coaxing.**

The Hercules is so simple in design, its construction is so accurate, the materials used are so fine that it will give you more power per gallon of fuel and with less care than any other engine made.

Equipped with a Wico magneto, which is water-proof and trouble-proof and has only one moving part, the Hercules always starts easily and operates smoothly.

Hercules stocks and repair service in all principal cities enable you to replace worn parts quickly and easily.

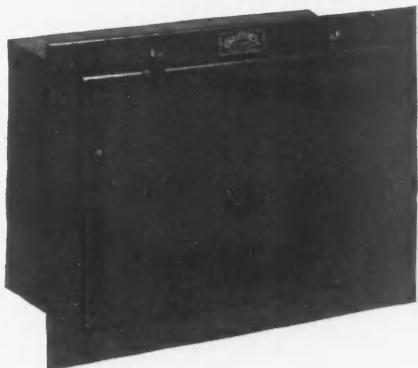
You are sure to be better satisfied with Hercules service.

HERCULES ENGINES

*Gasoline Models 1 3/4 H. P. to 14 H. P.
Kerosene Models 3 1/2 H. P. to 14 H. P.*

Each Hercules engine is tested twice before it leaves the factory and is guaranteed to deliver the full rated power.

The Best at no Additional Cost



Gabriel Rolled Steel Coal Chutes are furnished with solid steel or wire-glass glazed door. They fold up compactly for ease in handling and storage. Roller and chain for automatic opening is standard on Gabriels.

GABRIEL Coal Chutes

You gain very definite advantages when you use Gabriel Rolled Steel Coal Chutes in your construction. First of all you can buy Gabriels as cheaply as you can ordinary coal chutes. And when you have installed a Gabriel you are assured permanent owner-satisfaction because Gabriels are the most convenient, most durable and finest appearing coal chute on the market today. Build with the best—they cost no more.

*Full details will be sent
on return of the Coupon.*

The GABRIEL STEEL COMPANY

BELLEVUE AVENUE **DETROIT, MICH.**

GABRIEL ROLLED STEEL PRODUCTS

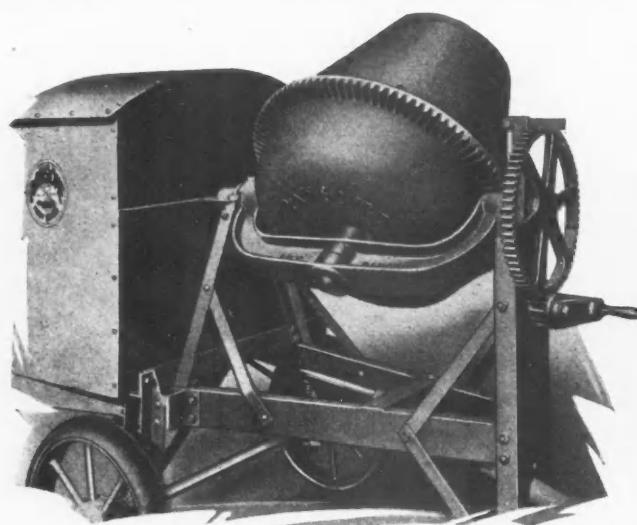
GABRIEL STEEL COMPANY
Bellevue Ave., Detroit, Mich.

Send me full detail and prices on Gabriel Rolled Steel Coal Chutes.

Name _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

AB-3-26



TIMKEN EQUIPPED

Look at the Spindle Bearing when you buy a Tilting Mixer. There's the surest indication of the strength or weakness of the whole machine because the Spindle Bearing has to take both the thrust and dead-weight of the drum when the mixer is operating.

Only Timken Tapered Roller Bearings—with the inner and outer races hardened—are good enough for Spindle Bearings in the Ransome 3 1/2-S Tilting Mixer.

Made with either four-wheel steel truck or two-wheel trailer with solid rubber tires and spring hung axle.

If you're looking for a light-weight, low-priced, handy mixer for general work on small jobs or for mixing mortar—and want a machine that will stand up, one that has all of the Ransome reputation and experience behind it—investigate this newest Ransome.

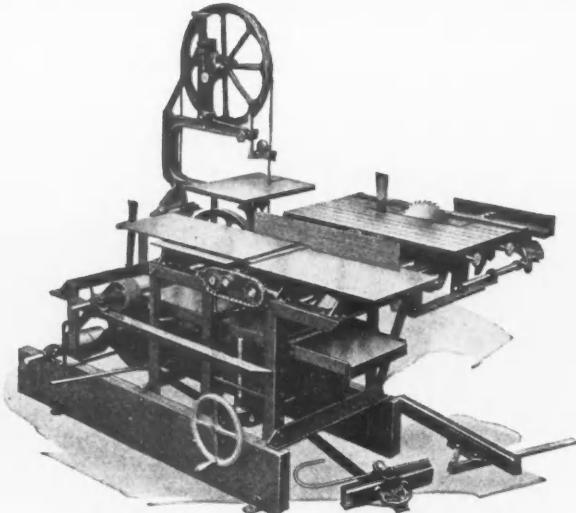
Write for copy of Bulletin No. 116.

Ransome

RANSOME CONCRETE MACHINERY CO.

Main Office and Plant: Dunellen, N. J.
Chicago Office and Warehouse, 1353 W. Washington Blvd.
Complete Stock and Service
Manufacturers of Concrete Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoists, Buckets, Bins, Cars, Carts, Etc.

8051



Parks "Pride-of-the-Shop" \$420.00 will double your profits

Save labor, save mill-costs, save time, save money—with this splendid Parks woodworker. Frank Drury, of Jerseyville, Illinois, figures his Parks is worth \$2,000.00, based on its return as an investment.

Parks Pride of the Shop is a self-feed 12-inch pony planer, 12-inch jointer, 12-inch rip and cross-cut saw, 22-inch band saw and boring machine—all in one compact unit. Write for complete specifications and catalog.



Parks Pride of the Shop saves the wages of four to six hand-carpenters. Do your own special mill-work and rush pieces without delay and for less money. Save time on house-framing. Make door and window-frames. Get out a stock of standard mill-work pieces during slack periods and be ahead of the job during the building season. With the resaw and pony-planer you can make up material of special thickness from rough stock. You can think of hundreds of ways this husky, fast-working machine can cut costs and make money for you.

Parks machines are the most for your money. Get a Parks. Send for complete catalog describing Parks Pride of the Shop and other machines.

The Parks Ball Bearing Machine Co.
Fergus Street and C. H. & D. R. R. Cincinnati, O.
Canadian Factory: 200 Notre Dame East, Montreal, Canada

PARKS

WOODWORKING MACHINES



Steel Sheets that Resist Rust!

The destructive enemy of sheet metal is *rust*. It is successfully combated by the use of protective coatings, or by scientific alloying to resist corrosion. Well made steel alloyed with Copper gives maximum endurance. Insist upon

KEYSTONE Rust-Resisting Copper Steel

Sheets and Roofing Tin Plates



Keystone Copper Steel gives superior service for roofing, siding, gutters, spouting, flashings, metal lath, tanks, culverts, and all uses to which sheet metal is adapted, above or below the ground. Our booklet *Facts* tells you why. We manufacture American Bessemer, American Open Hearth, and Keystone Copper Steel Sheets and Tin Plates for every requirement of particular architects, builders and contractors.

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Our Sheet and Tin Mill Products represent the highest standards of quality, and are well suited to the architectural, engineering, and general construction fields. Sold by leading metal merchants. Write nearest District Sales Office.

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General Offices: Frick Building, Pittsburgh, Pa.

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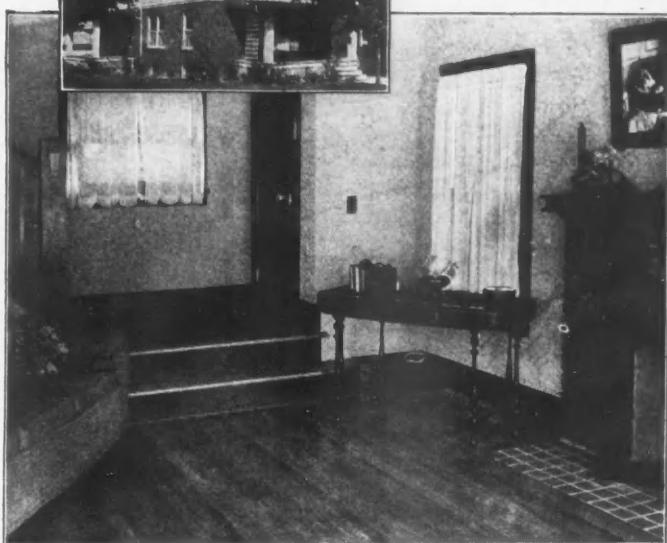
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS CO., San Francisco

Los Angeles Portland Seattle

Export Representatives: UNITED STATES STEEL PRODUCTS CO., New York



Oak flooring laid in this typical Kelly-built home is a beautiful decorative foundation for the room, permanent and sanitary.



National Advertising helps sell OAK floored homes

National advertisers spend over a billion dollars annually selling their products to the public, a large proportion of which is in the building field. Every builder who builds into his properties standard advertised material, cashes in on the quality guarantee of manufacturers whose reputation is at stake. Such homes are easier to sell. Satisfied owners help sell their friends.

The G. A. Kelly Co., of Flint, Mich., has developed the "Kelly-built" policy, on the theory that a home is not a pile of lumber or brick to furnish shelter, but a lasting source of pride and satisfaction to the owner, and to the community. Nationally known materials, including Oak flooring, help sell Kelly homes.

Oak Floors are Standard

The advantages of Oak Floors are appreciated by all builders who build for permanence, comfort and beauty. They never need replacement; they are sanitary, and reduce housework; they retain their bright natural beauty indefinitely. "The Story of Oak Floors" contains color plates of modern finishes which harmonize with room decoration. It will be mailed to you on request with technical literature of great practical



Oak Floors help sell the home



The Reardon Co.

203 Clinton Street, St. Louis, Mo.

Please send me your FREE Booklet on BONDEX.



Name.....

Street.....

City..... State.....

ITE, CRESTO, LUMNITE, ALFRESCO



*Most any
hammer can
drive nails.*

But how
about
pulling
them?

It takes a good hammer with good claws to pull some nails—and that's where the Cheney Hammer scores. Each end of a Cheney—head and claws—is specially designed, specially made and specially tempered to do its particular work.

The next time you buy a hammer tell your dealer "Cheney."

Cheney

RANSOME CONCRETE
MACHINERY CO.



Main Office and Plant: Dunellen, N. J.
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Complete Stock and Service
Manufacturers of Concrete Mixers, Pavers, Pneumatic
Mixers, Chuting Plants, Hoists, Buckets, Bins,
Cars, Carts, Etc.

8051

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Building to Better Selling Advantage

THE builder's most serious problem is not one of construction, but of sales. Turnover is important; steady sales must assure the builder of ready returns from his large investment.

The public today is demanding better homes; and in that demand is the possibility of getting quicker turnover for those builders who are willing to provide better construction.

First cost is an important consideration for every buyer. He is not unwilling, however, to have his investment safeguarded against undue depreciation.

Give him good workmanship and known lumber; sell him on the satisfaction over many years that Long-Bell trade-marked lumber assures; have him realize the economy of maintaining first charm over a long period of time . . . and he will buy!

The high standards of Long-Bell manufacture stand back of you in that sales appeal.

Sold by retail lumber dealers.

The Long-Bell Lumber Company
R. A. Long Bldg. Kansas City, Mo.
Lumbermen Since 1875



Long-Bell
Marked LUMBER

Douglas Fir Lumber and Timbers; Southern Pine Lumber and Timbers; Creosoted Lumber, Timbers, Posts, Poles, Ties, Guard-Rail Posts, Piling; Southern Hardwood Lumber and Timbers; Oak Flooring; California White Pine Lumber; Sash and Doors; Box Shooks.

KNOW THE LUMBER YOU BUY

In Nothing Else Does Quality **PAY BIGGER DIVIDENDS!**

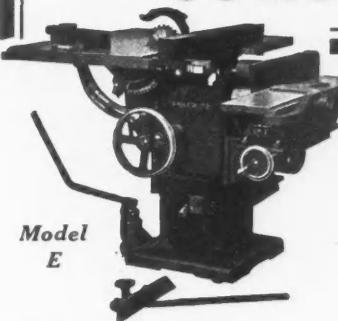
QUALITY that assures absolute reliability is one of the prime considerations that govern the farsighted contractor in his selection of labor saving equipment. For absolute dependability means the elimination of those irritable delays that usually prove mighty costly.

Then, too, the cost of real quality equip-

ment when spread over the years of service it renders is far less per year than the cost of that equipment which initially sells for much less.

In no other Portable will you find the quality construction, convenience of operation and labor saving possibilities combined in

TANNEWITZ COMBINATION PORTABLES



Model
E

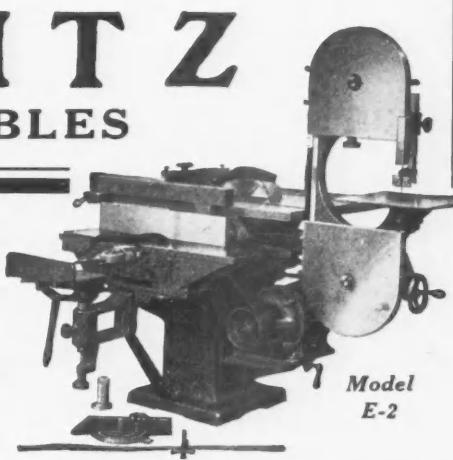
It will pay you to get the facts concerning our machines and the convenient terms on which they are sold. Simply ask for Bulletin "E and E-2."

The Tannevitz Works

307 Front Ave.

Grand Rapids

Michigan



Model
E-2

Send for this Booklet —

And learn about the new way
to paint stucco and cement
successfully!

This remarkable new cement paint, Bondex, makes it possible to paint any stucco, concrete, brick, sand finished plaster, tile or masonry surface and restore its weathered and stained appearance to look better than new!

Bondex is something new and different in paints. It costs very little. It comes in powder form ready to mix with water and apply by brush or spray. Your choice of 16 beautiful colors and white. Bondex is absolutely weatherproof.

An unlimited market of profitable jobs is waiting for you!

Send for booklet

We will gladly send a descriptive booklet showing some of the beautiful effects of Bondex and arrange for you to try a sample. Write for booklet now.

The Reardon Company, St. Louis, Mo.

BONDEX
WATERPROOF
CEMENT PAINT

Other Reardon Products—SOLARITE, CRESTO, LUMNITE, ALFRESCO



The Reardon Co.
203 Clinton Street, St. Louis, Mo.
Please send me your FREE Booklet on BONDEX.

Name.....

Street.....

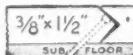
City..... State.....



The finish of
CROMAR
 READY FINISHED
OAK FLOORING
 stands the hardest wear

The CROMAR
 Ten Points of
 Prime
 Importance

1. Factory finished — like furniture.
2. Finish stands hardest wear.
3. Coating four sides protects against moisture.
4. V-type tongue and groove easy to lay.
5. Bevelled tongue prevents damage in nailing.
6. Cleanable surface groove.
7. Convenient and damage-proof bundle.
8. Laying contracts need not be sublet.
9. Promotes extra sales for occupied houses.
10. Laid and used the same day.



CROMAR Flooring is filled, varnished, waxed, and moisture-proofed at the factory — by patented machines.

One of the outstanding results of this machine-finishing is the amazingly hard surface of CROMAR Floors.

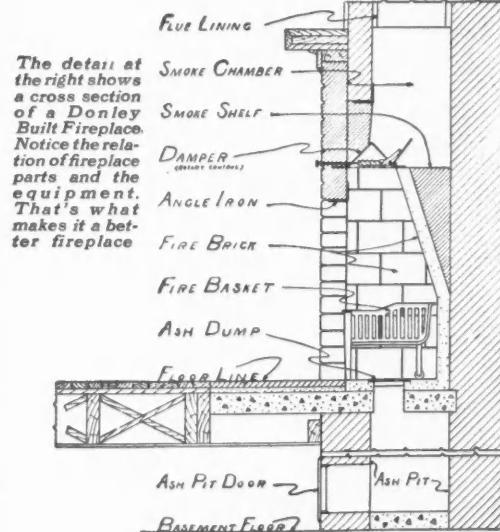
Much of the enduring quality of a floor finish, of course, depends upon how it is applied. With CROMAR, great pressure drives the filler deep into every pore of the wood. Thus the oil in the varnish is prevented from seeping into the wood. That oil, remaining, keeps the varnish elastic. Test the result with a hammer: you may dent the wood but you cannot chip off the varnish nor scratch it white.

The Crooks-Dittmar Company
 Williamsport, Pa.

Refer to our pages in the "Home Builders Catalog" for further details. Write us for free sample, complete literature, and the name of the nearest CROMAR Dealer.

CROMAR
 READY FINISHED
OAK FLOORING
 LAID AND USED THE SAME DAY

**Building
 Better Fireplaces
 Means Using Better Plans
 and Equipment**



If you want to build fireplaces that completely satisfy every customer, try building them according to Donley Fireplace Plans, and be sure to use Donley Fireplace Equipment including the Donley Damper with its smooth metal throat.

The above combination makes a fireplace that will not soot smudge or smoke, that's easily regulated and that gives off plenty of clean economical heat.

The complete Donley Fireplace Plans, designs, construction photographs and descriptions of Donley Fireplace Equipment are given in the Donley Book of Fireplaces. A copy is yours for the asking.

Donley Catalog also sent if requested

The Donley Brothers Co.
 13910 Miles Ave.  Cleveland, Ohio

**DONLEY
 DEVICES**
 Complete the Home

for BEAUTIFUL MANSIONS OR BUNGALOWS

Beautiful birch

displays good workmanship to best advantage, ever reflecting credit upon the builder and gratifying the pride of the owner.

It permanently retains its fine appearance—doors, trim, paneling, built-in cabinet work, and floors—whether finished natural, stained or enameled.



Beautiful birch effectively used for trim and built-in cabinets in this "homey" dining room

Win your client's life-long appreciation by recommending rotary-cut birch veneer for doors and panels—less costly and more beautiful than straight-sawn veneer from other woods, and it will not check.

The close grain and "mar-proof" hardness of birch make it one of the most enduringly beautiful interior finishes—let birch homes build you more business!

Let us help you. Send us a list of your most promising prospects, and we will gladly send them a copy of the "Beautiful Birch" book—and tell them it is at your request.

THE BIRCH MANUFACTURERS
201 F. R. A. Building Oshkosh, Wisconsin

"Beautiful Birch for Beautiful Woodwork"

IMPROVED G & B Junior Convertible Level

The World's Greatest, Fully Equipped and Guaranteed
TRANSIT AND LEVEL COMBINED

FREE TRIAL

\$5.00 will bring
it to you

Deposit cheerfully returned if
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EASY TERMS

Send Coupon
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Learn to use it in
less than an hour
with our illus-
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FREE WITH EVERY INSTRUMENT

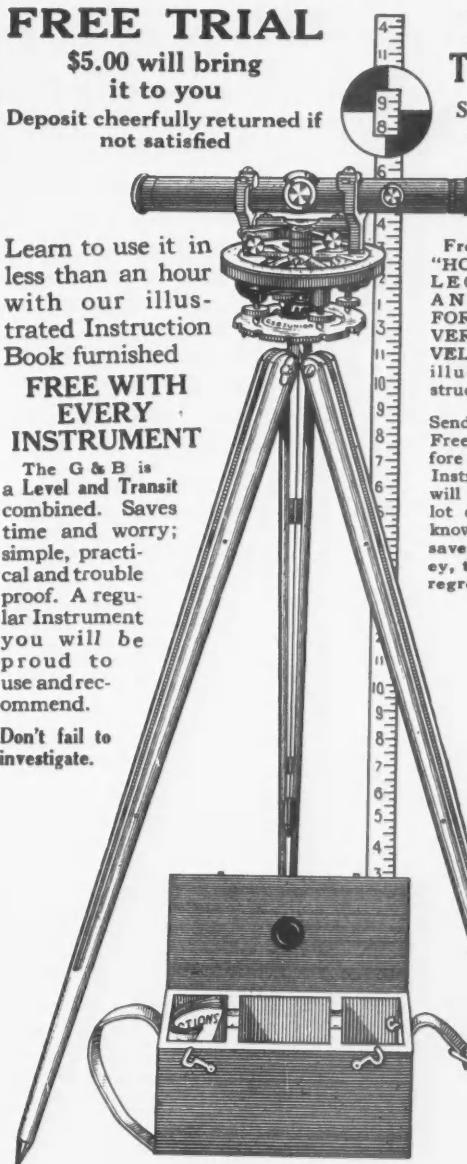
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white metal tar-
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670 River St., Troy, N. Y.
Mail Circular E, and quote "How to Select, Test and Care for
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Name

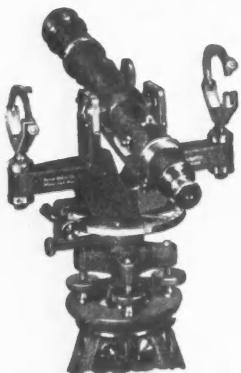
Address

This places me absolutely
under no obligations.

Mar., 1926, A.B.



No. 2020—New Model Convertible Level in level position.



No. 2020—Changed to Transit position in six seconds.

White's Improved CONVERTIBLE LEVELS

\$95.00

Ten Days'
Free Trial

Lead in Design, Quality Workmanship and Power

Before you buy a level, investigate and compare the many exclusive advantages offered by White's Convertible Levels. They have been favorites with the progressive builder for many years. There's a White Level to suit your needs and at a price you will be glad to pay. Two popular models are shown here.

New Model No. 2020

This new one-piece combination White Level is universally acclaimed the most perfect leveling instrument of its kind ever constructed; has many exclusive features and refinements not found in ordinary levels.

New "Duplex" No. 2052

This simple, accessible level makes the change from level to Transit instantly, by simply pressing a lever. Has adjustable telescope standards cast integral, and many other features that permit speed and accuracy.

DAVID WHITE CO., INC.
901 Chestnut St., MILWAUKEE, WISCONSIN



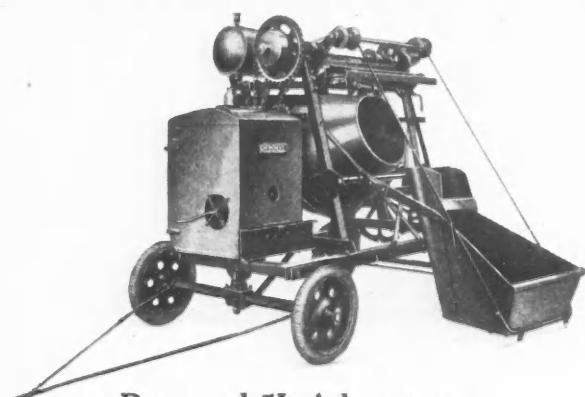
No. 2052—New Duplex Model in level position.



No. 2052—New Model Duplex in Transit position. Instantaneous changes.

**Write for catalog describing
the complete line**

FOR ANY "ONE-BAG" JOB



Remmel 5L Advantages

1. Direct Gear Drive—full measure power direct to the drum.
2. 100% Mixing Drum—no waste corners—it has every inch of capacity as rated and more.
3. Reinforced Drum Yoke—for longer life.
4. Locking—tilting mechanism.
5. All-metal construction.

Write for latest catalog.

Don't fail to see the New Remmel 5 L Mixer. It's a "finished mixer." It is rated at 5 cu. ft. of mixed materials but because it is oversized it lends itself economically to any one-bag mixing job with equal satisfaction.

Use the Remmel 5 L on foundation work, flooring, sidewalks—in fact, it is not too light for heavy work or too heavy for light work. It is the ideal all around mixer.

The New 5 L is equipped with a 4 H. P. Le Roi Engine, automatic measuring water tank and other automatic "throw-out" features. It can be furnished with disc wheels, cushioned tires. It has every advantage including low price.

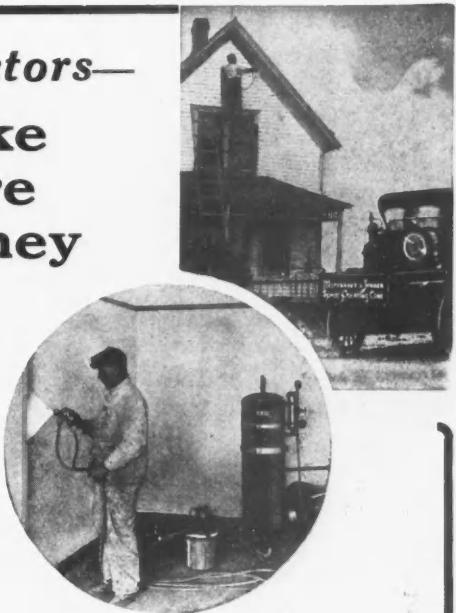
*Let us send you specifications
and other detailed information.*

THE REMMEL MFG. CO.
KEWASKUM - - - - - WISCONSIN

**REMMEL "DIRECT DRIVE"
MIXERS**

Contractors—**Make
More
Money**

Take the
Entire
Job—
Including
the
Painting



Get a Binks Portable Spraying Outfit which works as fast as six men can paint by hand—and does an infinitely better job. You can thus make a big profit on the painting, which with ordinary brush methods is eaten up by hand labor.

You'll be surprised at the ease with which a man with any aptitude whatever for painting can take hold of the Binks machine and how soon he will be producing beautiful, uniform work, every day and all day, and as many extra hours as you want to work. For into Binks equipment has been built a never-ending dependability which is the delight of its users and the despair of its competitors.

Binks equipment is used on inside as well as outside work. On rainy days or during winter months you can keep your outfit busy and make it pay dividends every day of the year. Plenty of chances to use it for other Contractors or Builders if your own painting work grows slack.

The speed and quality of the finish produced by the Binks Spray Equipment is exceptional. Our engineers will explain why you can expect more from a Binks Gun than from any other.

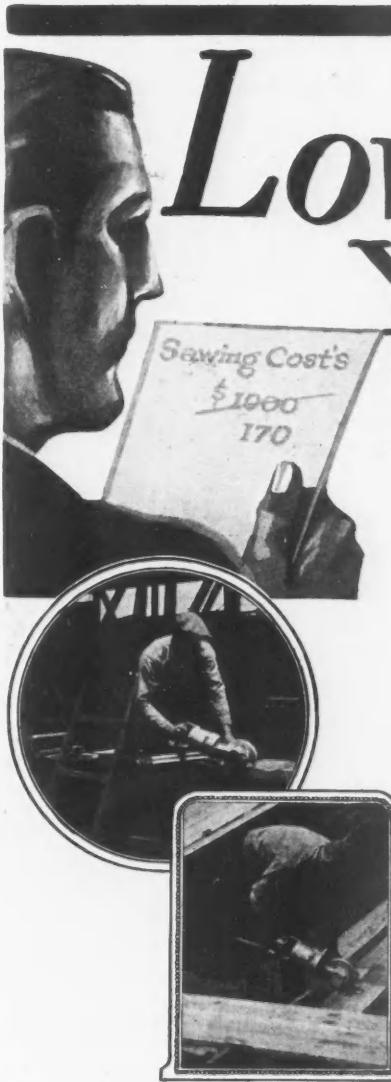
Write for Bulletin B and tell us just what kind of work you are most interested in. We will send you valuable information.



Binks Spray Equipment Co.
3121 Carroll Avenue : Chicago, Illinois

*The World's Largest Manufacturers of
Industrial Spraying Equipment.*

Lower Your Bid

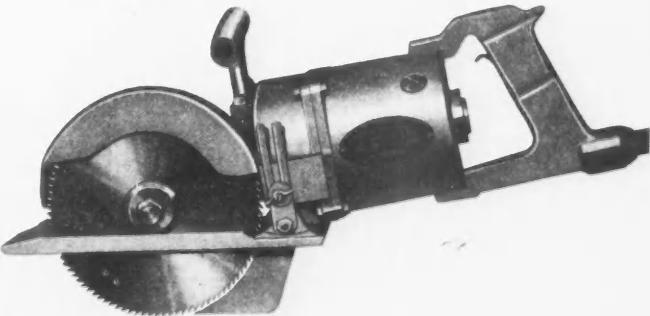


When you sharpen your pencil to estimate on a job—others are doing the same thing—to estimate on the *same* job. By using SKILSAW—the new portable electric saw—you can cut your usual sawing cost to one-sixth—an economy that will cut your bid way down without a penny's loss in profit. SKILSAW brings the speed of the buzz saw out on the job. It is a practical tool and has won the approval of carpenters, contractors and builders everywhere.

SKILSAW Cuts Costs

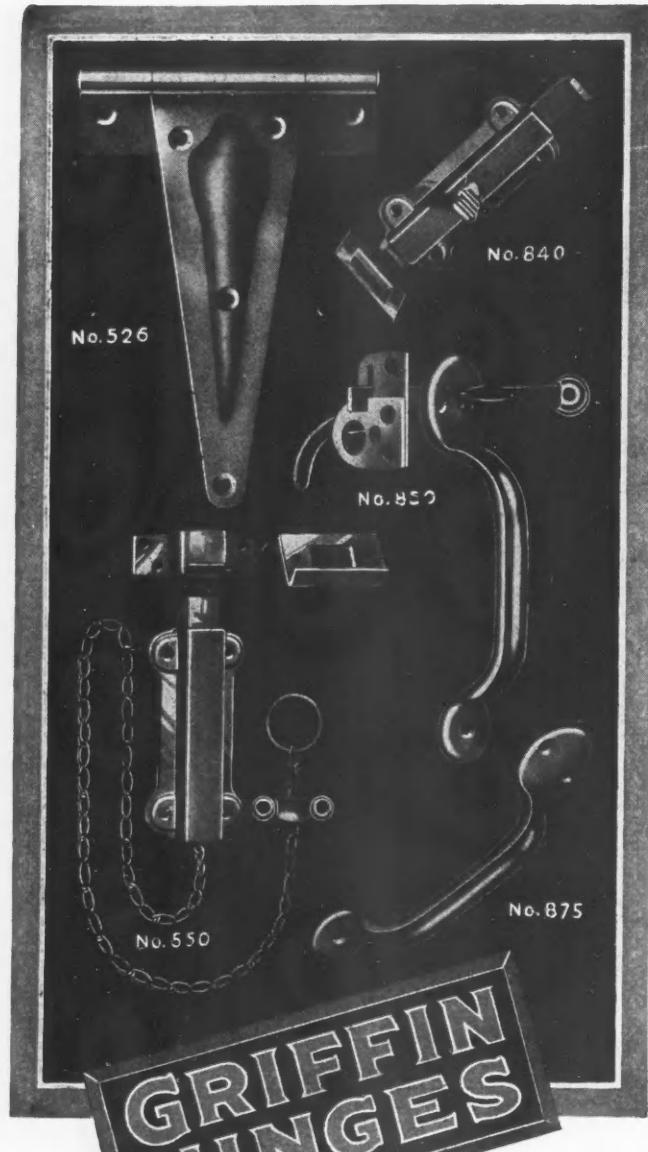
SKILSAW shows speed, accuracy and economy in cutting joists, rafters, flooring, sheathing, bridging, lagging, forms for concrete or any other wood sawing job.

Send for our new descriptive booklet M-2, fully explaining the advantages of SKILSAW.



Michel Electric Hand Saw Co.
1805 Berenice Ave. Chicago, Ill.

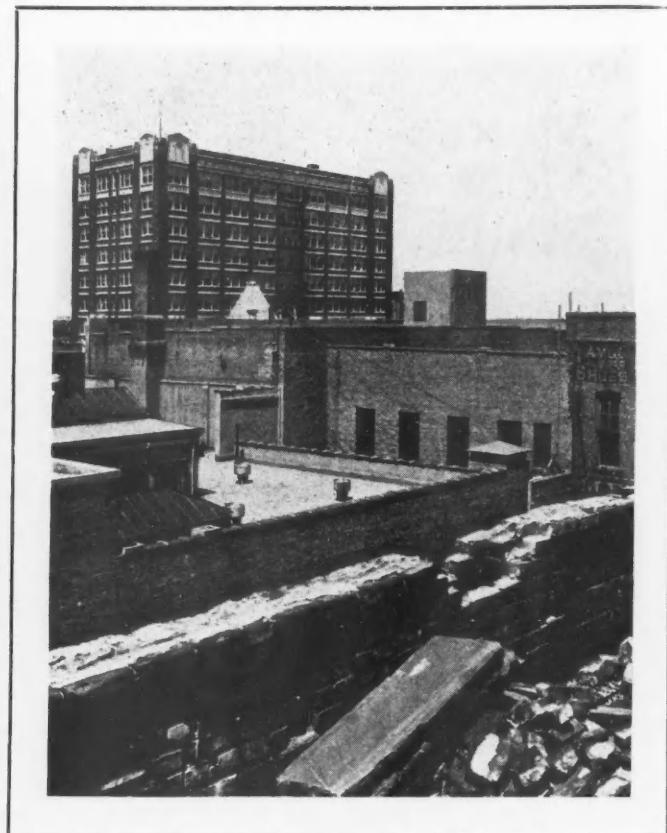




The sturdy, practical quality of GRIFFIN Hinges is embodied in this splendid line of garage hardware sets.

GRIFFIN
Manufacturing Co.
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 45 WARREN ST NEW YORK
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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Don't let walls break down like this

WALL Failure such as pictured above can be prevented by the use of Vitrified Salt Glazed Clay Wall Coping.

Top the brick with this economical wall coping. Rain, sun, and frost do not harm it. Age cannot discolor it.

Contrast the falling wall with the Coping-protected walls on the adjoining buildings. Which one will your walls be like in years to come?

Clay Products Association
 Chamber of Commerce Bldg.
 Chicago

VITRIFIED *Salt Glazed* CLAY
Wall Coping

AB3-R-RTG.



High in Quality . . Low in Price

Kewanee Window Chutes, pressed out of heavy rust-resistant "Copper Steel" are durable in construction and attractive in appearance. Volume production enables this superior type coal chute to be sold at the price of brittle cast-iron chutes or light-weight flimsy affairs. Kewanee advantages, too numerous to mention here, are described in detail in our new catalog which will be sent upon request.

Dealers—Write today for Agency Proposition and Liberal Discounts

KEWANEE MANUFACTURING CO.
307 Tremont Street

Kewanee, Illinois

KIMBALL Light Electric Elevators

This line of elevators has been developed after many years of practical and technical research. In it we offer a practical, inexpensive yet efficient elevator that is delivered to our customers with all parts complete and sawed, drilled and fitted, ready for installation.

Write for Special Descriptive Matter on Light Electrics.

KIMBALL BROS. CO.

989-97 Ninth Street
Council Bluffs, Iowa

There is a Kimball Elevator built for every requirement.



KIMBALL BROS. CO.
COUNCIL BLUFFS, IOWA

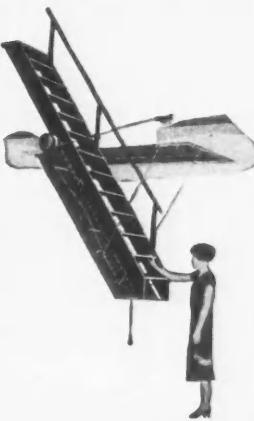
BESSLER DISAPPEARING STAIRWAYS



Tell Your Clients About Them

PEOPLE want, in those homes they are talking to you about, all the space they can get at the smallest possible outlay. An attic finished off for extra bedroom, sewing room, den or storage space, reached by a Bessler stairway, affords the desired extra space at negligible cost.

The Bessler is a substantial, good looking stairway, much more convenient and accessible than the average box stairway. It glides so easily up and down, perfectly counterpoised, that a child can operate it.



Glides Up Out of the Way When Not in Use

A Bessler Stairway is a 100% space saver because it takes up no space whatever in the room below when not in use. Nor does it seriously interfere with its arrangement.

Easy to Install

Installation is easily made in old houses as well as in buildings under construction. Any carpenter can install one in from 6 to 8 hours where ceiling must be cut out and opening cased up.

SATISFACTION GUARANTEED

If your client is not fully satisfied with the service given by a Bessler, you are authorized to return purchase price and we will make good with you.

SEND FOR DETAILS

The Bessler Disappearing Stairway Co.
AKRON, OHIO

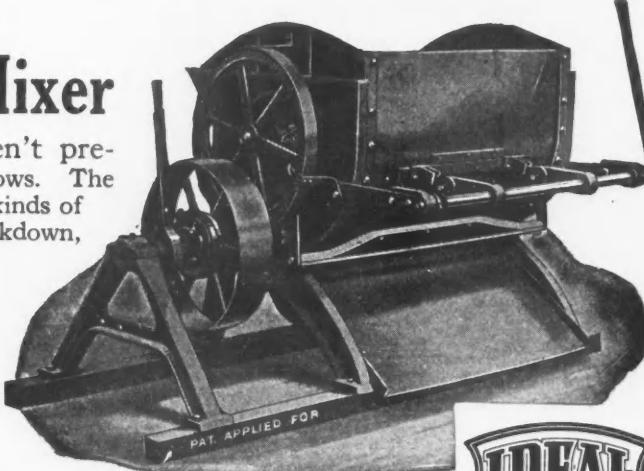
They Expect Much; They Get More!

Men who buy the improved
Ideal Products Plant Mixer

look for remarkable results, but they aren't prepared for the extraordinary production that follows. The ability of this Mixer to work early and late, in all kinds of weather, and to perform for years without a breakdown, is positively uncanny.

And now we incorporate Strenes Metal Liner when ordered as an extra. It is highly resistant to abrasion and cast in one piece, giving you a Mixer that is practically "un-wear-out-able."

WHY NOT ENJOY MORE THAN YOU EXPECT?
WHY NOT INFORM YOURSELF ABOUT THE
IDEAL PRODUCTS PLANT MIXER? WRITE US



Two capacities: 9-foot size
and 14-foot size

I D E A L
THE IDEAL CONCRETE MACHINERY CO.
5014 SPRING GROVE AVE. CINCINNATI, OHIO
TRADE MARK REG. U.S. PAT. OFF.

Rockford Sash Pulleys

GOOD quality material and manufacture make Rockford Sash Pulleys strong and dependable. Furnished in any finish to match other hardware. Screws in the same finish also supplied. Both pulleys and screws are treated to give them high rust-resisting qualities. Prompt service assured from our centrally located factory and branch offices.

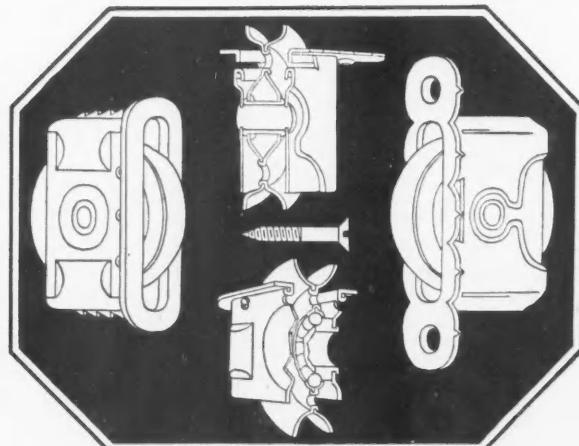
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Rockford, Ill.**

Branch Sales Offices:

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Frame Construction Calls for

Bostwick

TRUSS-LOOP
METAL LATH

ALL the virtues of fine wood construction are heightened and preserved when Bostwick "Truss-Loop" Metal Lath is used as a plaster base. For thirty-five years, architects and practical builders have recognized its peculiar excellence in work supported by joists and studding.

It is substantial, weighing 4½ pounds per yard and stiffened by raised truss arches, closely spaced over its surface.

Easily handled, it fits closely without give or stretch and with practically no need of overlap. It is easily and surely nailed into place.

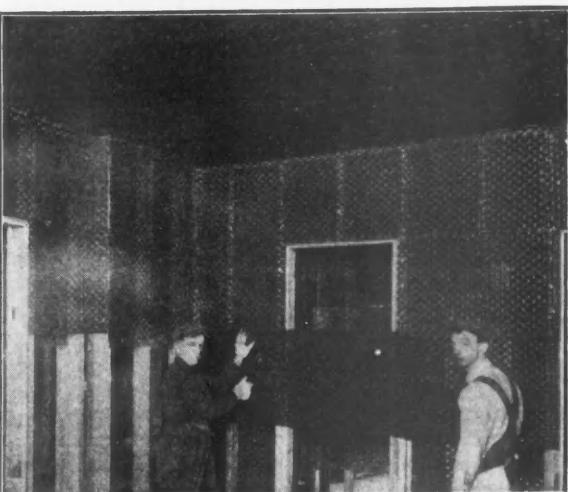
Key is continuous across joists, studs or beams, owing to the raised "truss-loops," avoiding a weakness found in some metal laths when in close contact with wood supports.

Plastering economy results in both material and labor. Stiffness of this lath aids rapid plastering. Economical but efficient key saves plaster waste between walls.

Applied loops inward, Bostwick "Truss-Loop" Lath is self-furred over any surface and offers a base that can be plastered with maximum economy of material and without sacrifice of results.

Saving of overlap, easy application, rapid plastering and economy of plaster make this fine, heavy, substantial lath actually cheaper in the finished wall than many lighter brands of lath. Its use renders wood construction safe against 95 per cent of fire hazards. Sample and data sent free on request.

THE BOSTWICK STEEL LATH CO.
NILES, OHIO



Interior Julius Church Apartments, Newark, N.J.
Architect, William Lehman. Lathed with
Bostwick "Truss-Loop" Metal Lath.



Ask
Your
Dealer
About
This
Frame
Service

WHEN you need frames, call up your dealer and ask him what kind of service he can give on Bradley-Miller Michigan White Pine Frames.

Here's his answer: "We can fill your order immediately for double-hung window, casement, door and cellar sash frames, any size, any type of construction. We can also give you the market opening and pattern wanted. These Bradley-Miller Frames have all exposed parts of Michigan White Pine, the finest frame wood grown."

Bradley-Miller Michigan White Pine FRAMES

Bradley-Miller Frames come in two bundles tied with mar-proof cord. Your carpenter can nail them up in less than ten minutes.

Order them the next time you need frames. The above prompt Bradley-Miller Frame service adds to your profits. The quality pleases the most exacting. You'll like them.



Bradley, Miller & Co.
1200 Marquette Street
BAY CITY, MICHIGAN

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BRADLEY, MILLER & CO. 1200 Marquette St.,
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Gentlemen: Please send me booklet describing Bradley-Miller Michigan White Pine Frames.

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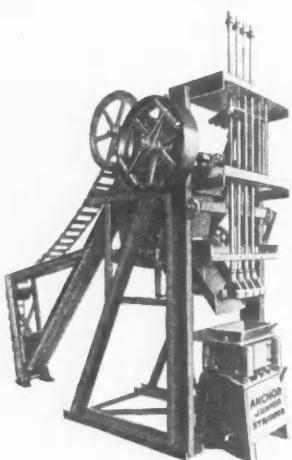
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Concrete Building Units



One item of the big Anchor line. This is the Junior Stripper, for making plain blocks on a quantity production basis.

If you can buy Anchor concrete block, brick and tile in your town, use them on your jobs. They'll protect your reputation as a careful builder.

If they are not made there, think over the idea of becoming interested in a local Anchor plant.

Our catalog—full of concrete products information—will be sent to you if you ask for it.

Anchor Concrete Machinery Co.
Columbus, Ohio

Adrian, Mich.

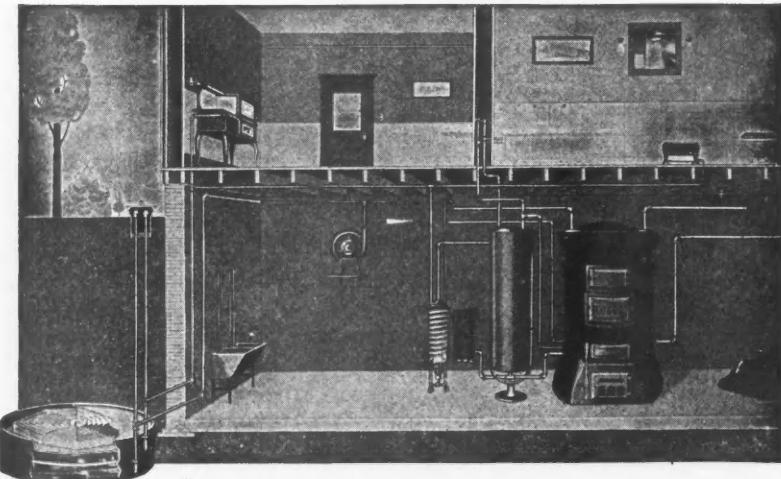
That problem of gas supply permanently solved—

Modern invention has made it possible for you to have gas in your suburban or country home by installing a little inexpensive GAS PRODUCER of your own.

The CLARK GAS PRODUCER with equipment is not merely a convenience—it is an absolute necessity to economy, convenience and safety. It requires little or no attention and very quickly pays for itself in time, fuel and labor saved.

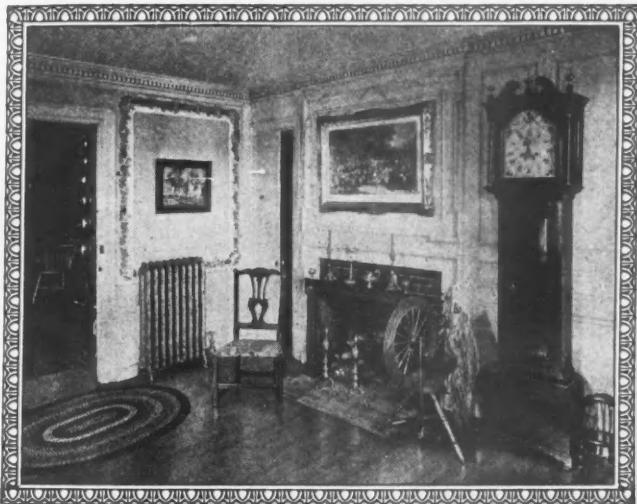
It gives you an abundant supply of gas for cooking, heating water for baths and laundry purposes, operating the Humphrey radiantfire for room heating, laundry mangles, clothes dryers, etc.

A handsome folder just off the press gives valuable information. Send for your copy today.



*Manufacturers of Clark Gas Producers and Equipment Exclusively
for more than thirty years*

AMERICAN HEATING & LIGHTING COMPANY
Dept. S, MORENCI, MICH.



This Kind of Floor shows off furnishings to advantage

Home owners find that a beautiful oak floor enhances the beauty of their furnishings, their walls, pictures and hangings.

Even furniture of moderate cost is displayed to the best advantage when well set off by open spaces of nicely selected and laid oak flooring.

Oak is oak, but the selection of certain figures in oak, the finish of the surface and perfect matching is what determines beauty of a laid oak floor.

"Perfection" Brand Oak Flooring is the cream of the stock. It takes a velvety lustre. It matches perfectly. The older it is, the more its beauty appeals to the eye.

For better satisfaction of the architect, the contractor and the owner, "Perfection" should be used. Technical data and a copy of "The Overlooked Beauty Spots in the Home" sent on request.

ARKANSAS OAK FLOORING COMPANY

Pine Bluff, Arkansas



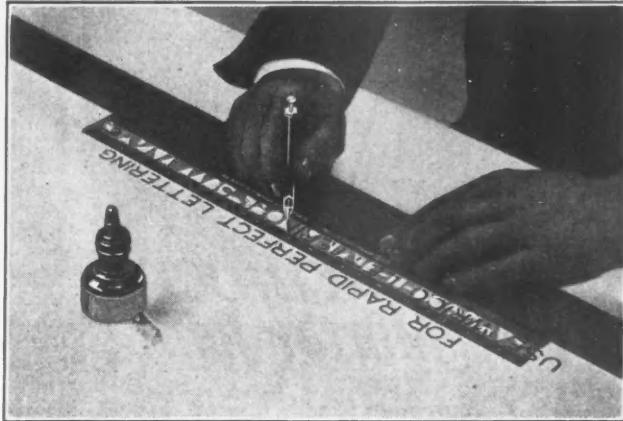
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PERFECTION
Brand Oak Flooring

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(Incorporated)
154 NASSAU STREET, NEW YORK

This Coupon Brings You Full Details

The Wood-Regan Instrument Co., Inc.
154 Nassau Street, New York

Gentlemen:—Please send me a copy of your catalog and price list giving full particulars concerning WRICO LETTERING GUIDES.

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City and State.....

Nature's Permanent Mineral Colors

Made Since 1887

Remember the Mortar Joint!

Color interest sells homes. Every contractor who builds for sale realizes that fact. The color may be in the roof; it may be in the trim; it may be in the brickwork; but it catches the buyer's eye and makes the sale.

If you have not done so already, stop and consider the varied and beautiful effects you can secure in brickwork by the coloring of mortar. Many builders in erecting rows of houses of similar general plan secure variety by using different brick and different colored mortar in foundations and porch piers.

Use Mortar Colors. You will find them a great help in attaining beautiful effects that help the sale.

Clinton Metallic Paint Co.
60 CLINTON ROAD
CLINTON, N. Y.

Clinton Mortar Colors

CLINTON METALLIC PAINT COMPANY
CLINTON, N. Y.

*Fig. of the brickwork
in Mortar*

Write for color samples of Clinton Mortar Colors and complete information of their use.

Kornau Special Woodworker

Completely Equipped,
Including Motor

\$235.00

F. O. B. Cincinnati



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THESE
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Tilting Saw Table, 20" wide, 36" long with grooves on each side of saw. Swinging hands free to hold stock. Jointer, Saw and Band Saw independently driven. No Belts to shift. Right hand construction (the natural way to work). Jointer has safety head with adjustable front and rear plates 24" long. Front Plate 8" wide for making shiplap. Motor operates from lamp socket set in rear away from dust and shavings. Built in any combination for either motor, engine or countershaft drive. Let us tell you more about our Woodworking Machines.

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Gulow and Vandalia Sts. CINCINNATI, OHIO

OLD EUROPEAN SLATE ROOFS

Exactly duplicate the old slate roofs of Europe with their rich colorings and strong natural texture.

*Roof Suggestions
on Request.*

**KNICKERBOCKER
SLATE CORP.**
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"On the level" and on time—



Two important points which the successful Builder must observe. To finish on schedule time without sacrificing accuracy. Avoid costly errors and save time by frequent checking of your lines and levels. *Own a*

K & E ARCHITECTS' & BUILDERS' [Convertible] LEVEL

Simple to operate. A sturdy, accurate instrument for running lines, checking excavation work, foundations, floors, etc. *Quickly converted to the transit position* when it comes to sighting in a vertical plane, plumbing walls, etc.

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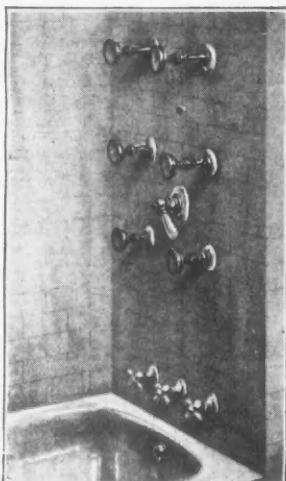
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The KENNEY SHOWER is the better shower. It is handsome, practical and efficient. Without overhead deluge it puts the water where you want it. Exclusive control of its hundreds of needle-like streams causes all the water to envelop and hug the body without splash, thereby eliminating the need of curtains.

The KENNEY SHOWER is a selling point.



Use coupon for further information



The Kenney-Cutting Products Corp., 507 5th Ave., N. Y., Dept. A.M.

Please send me information on KENNEY BODY NEEDLE SHOWERS FOR

Residence Hotel Apartments
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I Am
 Architect Name...
 Builder Address...
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Nesco Sheets are available under Master Brand specification of the Sheet Steel Trade Extension Committee—designed primarily for longer lived flat and corrugated work and light forming. We recommend them particularly in a Nesco copper bearing base.

SERVICE

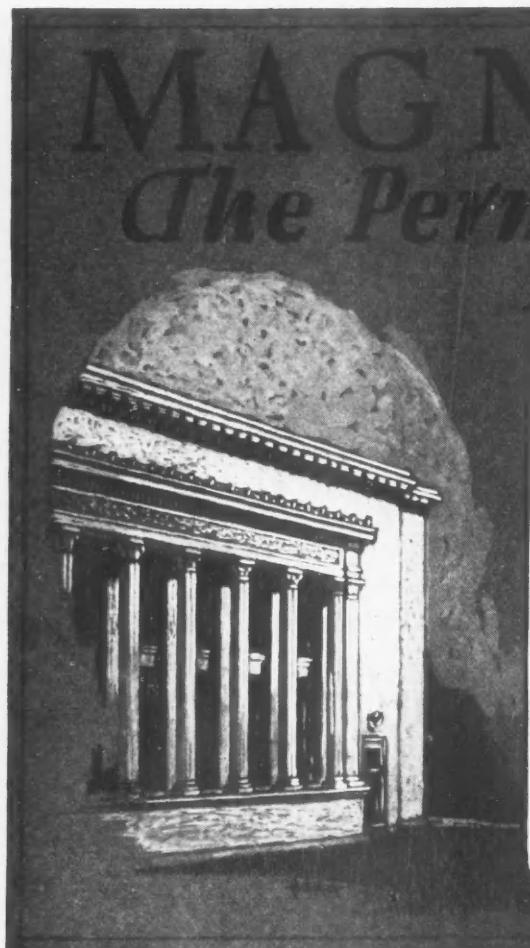
Direct shipments from the mill at Granite City, Illinois offer shorter hauls to the Far West, South West and Central West. Local service through leading jobbers.

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Galvanized, Blue Annealed and Black Sheets • Plates and Tin Plate
SHEETS

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The Permanent Stucco

The New Roman Finish
Write for Samples

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Home builders today are seeking new ideas in construction. Magnestone Stucco enables the building trade to fill this demand. Magnestone is shipped in neat form which reduces freight and warehouse expense. Also supplied in sanded form if desired. Climatic conditions don't stop the sale of Magnestone as it can be applied anywhere, the year 'round.

Write today for full information and samples of new finishes obtainable in Magnestone.

AMERICAN MAGNESTONE CORPORATION
Dept. 200
General Offices: Springfield, Illinois
Factories at Springfield, Ill. Kansas City, Mo. Ottawa, Ill.

Yale Locks are made in an "ANTI-HYDRO" Waterproofed Plant

The concrete floors in the Yale & Towne plant are *permanently* waterproofed, hardened and oilproofed with "ANTI-HYDRO."

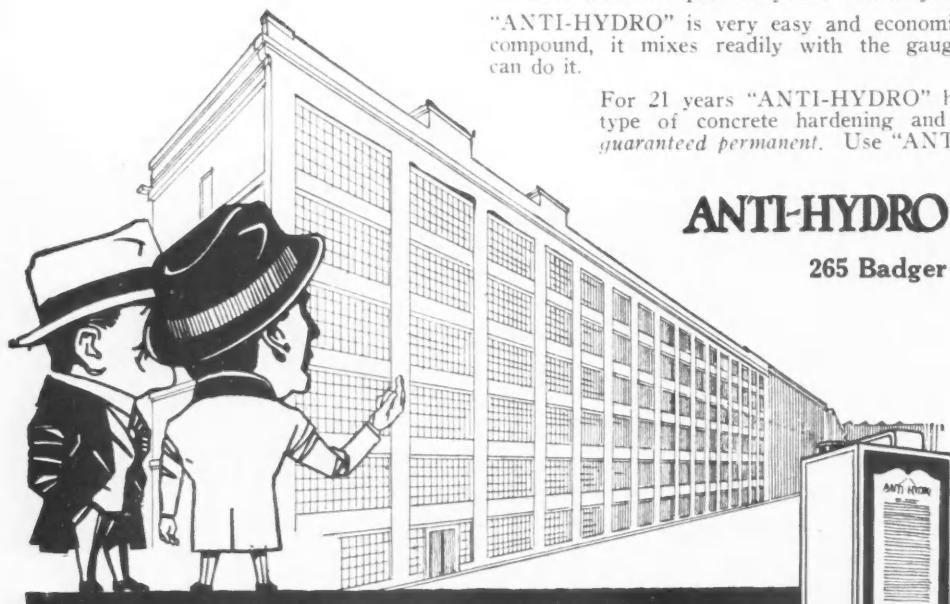
In addition to hardening and waterproofing concrete, "ANTI-HYDRO" also lowers the freezing point to 15 degrees F. all in one operation, making it possible to pour concrete and lay masonry work during freezing weather. This saves valuable time and permits you to finish your contracts on schedule.

"ANTI-HYDRO" is very easy and economical to use. Being a liquid integral compound, it mixes readily with the gauging water—any unskilled workman can do it.

For 21 years "ANTI-HYDRO" has been put to every test on every type of concrete hardening and waterproofing work. Results are *guaranteed permanent*. Use "ANTI-HYDRO" on your next job.

ANTI-HYDRO WATERPROOFING Co.

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YALE & TOWNE BLDG. STANFORD CONN. ENGINEER, RUSSEL G. CORY, NEW YORK.

Consult our Engineering Department for Specifications and data on any particularly difficult waterproofing or hardening job.

CONTRACTOR—
AMERICAN CONCRETE STEEL CO. NEWARK, N. J.

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Our line includes 3½ and 5 ft. Tilters with or without power loader and 5 to 14 ft. in drum type.

Also Gasoline Hoists, 4 to 50 H. P.

ORR & SEMBOWER, INC.
Established 1885

Reading, Penna.

You Can Lift Them Off and Clean Them



EASY-SET Chinawyte Bathroom Fixtures

The convenience, cleanliness, economy and beauty of "Easy-Set" Chinawyte bathroom fixtures recommend them to the builder, as well as the housewife.

They are attachable to the wall (without visible screws) and when in place they are removable for washing.

National advertising is bringing their many unique features before millions of homes.

J. H. BALMER CO., 259-267 Plane St.
NEWARK, N. J.

Install Limaco Ironing Boards

*In homes you
build. They
fit in the
wall between
standard
studding*



Thus another saving, besides the low first cost, is effected—that of installing quickly and easily. Quantity prices to dealers and reliable contractors.

Have a thought for the convenience of the prospective housewife. She will appreciate immediately the Limaco Ironing Board Cabinet. Install it for her and see how quickly you sell.

Ready assembled. Made of heavy gauge steel sheets and assembled by welding process.

Write for Complete Data

LIMA SHEET METAL PRODUCTS CO.
LIMA, OHIO

New York Representative

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FREE Engineering Counsel to Contractors and Home Builders

The nation-wide KEWANEE organization is always ready to give expert counsel FREE on problems of private water-supply, electric light or sewage disposal.

KEWANEE men are not salesmen nor ex-plumbers; they are hydraulic-electric engineers, carefully selected and KEWANEE trained. Back of them is the quarter century of KEWANEE engineering and manufacturing experience in private systems.

Today the KEWANEE line covers over 200 models of such systems.

*Send in the coupon below for helpful
KEWANEE literature — FREE.*

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KEWANEE



KEWANEE

"Bungalow Model"
Water Supply
System

Now \$140.00



I am a.....
Contractor
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Gentlemen: Please send me complete information on the following:

Kewanee "Bungalow Model" Water Supply System Kewanee Sewage Disposal
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DIAMOND

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WEATHER METAL
THE DIAMOND WAY STRIPPING

EXCLUSIVE
TERRITORY TO
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A PERMANENT BUSINESS
THE YEAR ROUND.
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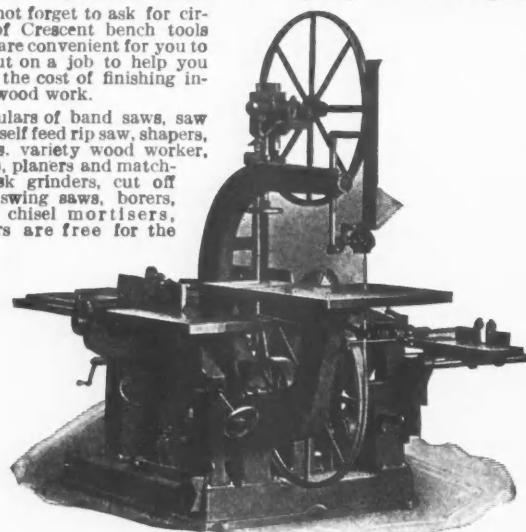
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THE DIAMOND
METAL WEATHER STRIP CO.
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THE CRESCENT UNIVERSAL WOOD WORKER continues to save money for wide awake contractors on their building operations. You need this machine and you should investigate it now before the Spring rush begins. Ask today for circular giving complete description.

Do not forget to ask for circulars of Crescent bench tools which are convenient for you to take out on a job to help you reduce the cost of finishing interior wood work.

Circulars of band saws, saw tables, self feed rip saw, shapers, jointers, variety wood worker, planers, planers and matchers, disk grinders, cut off table, swing saws, borers, hollow chisel mortisers, tenoners are free for the asking.



The Crescent Machine Company
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OUTSIDE ICING — may be installed in any Herrick in either end or either side of back. Provides convenience in summer icing, and Fall and Winter refrigeration without cost.

WATER COOLER — may be installed in any Herrick either for connection to city water or with special gravity glass tank. Pure ice water. No ice waste.

ELECTRICAL REFRIGERATION — may be installed in any Herrick. This type of refrigeration may be enjoyed to its highest degree in a Herrick.

Superior construction, high quality, and permanent satisfaction are Herrick standards. Install Herrick satisfaction.

HERRICK REFRIGERATOR COMPANY
105 River Street WATERTON, IOWA

Automatic Water Systems and Single Valve Water Softeners



Water Systems \$90.00 and Up

We make both deep well and shallow well or cistern pumps. The shallow well pump can be used on cisterns, lakes, streams and wells where the vertical suction lift does not exceed 22 ft. Furnished in 120, 200, 400 and 550 gal. per hour capacity. The deep well pump will operate on wells as deep as 650 feet.

Water Softeners \$100.00 and Up

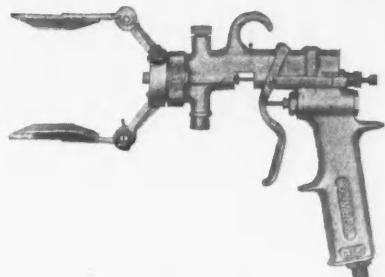
The Monarch Water Softener features a single valve control that eliminates all delicate moving parts, insuring long life; Armco iron rust resisting tanks, high capacity mineral, and extreme simplicity of operation. The mineral used has a softening capacity of 13,000 grains of hardness per cu. ft., is fully guaranteed and with proper care will last indefinitely. All necessary accessories included.

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MONARCH ENGINEERING COMPANY
234 E. 1st Street DAYTON, OHIO



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The Spraco Lobster Claw Attachment

This auxiliary now makes possible the cutting-in of trim, i. e., windows, doors, mouldings, wall fixtures, sinks, and also the cutting between ceilings and walls, washboards and floors without the use of a lineboard. It is used with the dependable 14-A SPRACO Gun for applying all kinds of paint and finishing materials.

Full information on request. Send for Bulletin 82.

Spraco Painting Equipment Company
Sole Manufacturers

60 HIGH STREET

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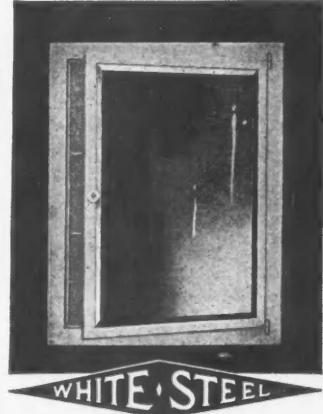
They Speed Up Sales and Increase Profits!

HUNDREDS of successful builders find it pays handsomely to install "White-Steel" Medicine Cabinets in lavatories and kitchens, as well as bath rooms. Their incomparable beauty commands attention! Unequalled sanitary and permanent qualities suggest exceptional care in planning and building the entire house!

Fortunately, in addition to speeding up sales, "White-Steel" Cabinets add to the sales value of the house far more than their cost to you.

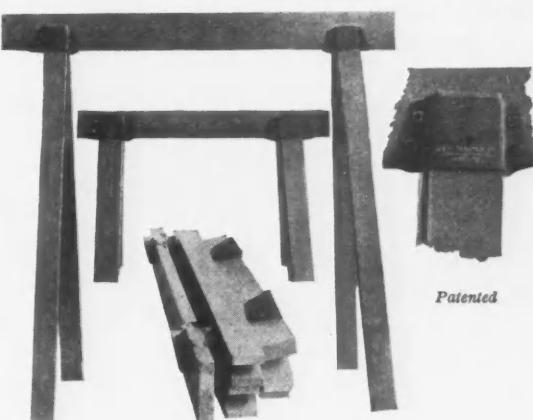
Take the first step now towards speeding up sales and increasing profits. Send for our new complete illustrated catalog.

"WHITE-STEEL" SANITARY FURNITURE CO.
Dept. 32



HENZIN METAL

the base of "White-Steel" Cabinets—made by our secret process, has great adhesive and rust-resisting qualities. Six coats of enamel, each baked separately, produce a lustrous, permanent finish.



B & R Trestle Brackets

Make the **ONLY SUCCESSFUL** take-down trestle. Made of 12 gauge steel. Take any size crosspiece and legs. No bracing except on extreme heights.

Readily adopted by all classes of contractors because they are

Economical—Efficient—Durable

PAY FOR THEMSELVES ON FIRST JOB!

B & R Trestle Bracket Co.
P. O. Box 365 Springfield, Illinois

THEIR LOW COST WILL SURPRISE YOU,

Builders Carpenters Floor Men

There is a method of floor smoothing that will save you lots of money. That will increase your profits whether you do your own or specialize in floor surfacing work. It is based on an American invention that you probably don't know about. You ought to get posted right away for the sake of profits.

Floor Smoothing Invention

We realize that with all these ads clamoring for your attention you may easily pass up a good item. And there is not room here to explain all about our fine machine. But it really does these four things:

- Produces a beautifully smooth and uniform finish.
- Greatly reduces the time per square foot as compared with many other methods.
- It reduces the cost per square below that of *any* other method.
- And consequently increases your profits.

Now if you could find a device that would do your work just a little better (to say the least) and a lot cheaper than any other, wouldn't you like to know about it? Sure! So check below and mail in this entire ad for free particulars.

I am a Builder Carpenter Floor Man
I employ men.

Name.....

Address.....

TRIPLE "A" MACHINE CO.
4607 E. Ravenswood Ave. Room 3B Chicago, Ill.

BOYLE'S BAYONNE
ROOF AND DECK CLOTH
Reg. U. S. Pat. Off.

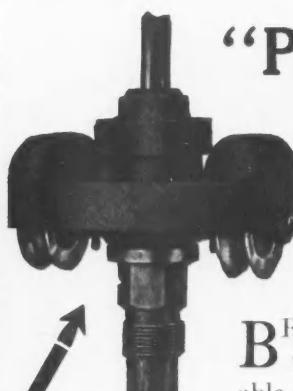
The best covering for
Porch Floors, Decks of
Piazzas, Sun Parlors,
Sleeping Porches, Etc.

It lays flat and stays flat.
No white lead bedding required.
It will not crack or buckle or peel,
and it is an ideal material for any
house, from cottage to mansion.

Write for Sample Book "N"

JOHN BOYLE & CO., INC.
Established 1860
112-114 Duane St., New York
1317-1319 Pine St., St. Louis

Durable "Poletube" Flag Pole Trucks



BRONZE makes the Poletube Flagpole Truck durable. Bronze hood over all bronze moving parts. Double bronze $2\frac{1}{2}$ inch sheaves running true on bronze roller bearings on Tobin bronze pins. $6\frac{1}{2}$ inch galvanized body revolves on two sets of bronze ball bearings around east steel king pin. This truck will not rust fast, neither will it foul the halyards.

The Poletube truck lasts practically forever.

*Write for catalog; giving full details
for installation sketch and proposal.*

THE POLE & TUBE WORKS, INC.
NEWARK, N. J.

STEEL POLES ONLY AND BETTER

The Money Saving Way -Wood Floors Over Concrete



You actually save \$50.00 to \$60.00 per thousand square feet in laying wood floors over concrete by using Bull Dog Floor Clips. The solid one-piece construction feature of Bull Dog Floor Clips is one point in their favor. The large anchorage surface is another. The simplicity of installation is still another. There are many other points of merit that recommend the Bull Dog method of floor anchorage to good architects and contractors.

If a Fill Is Required You Continue to Save



Bull Dog Floor Clip Co.
WINTERSET, IOWA
90 Branch Sales Offices
15 Convenient Distributing Points

Bull Dog Juniors are used where building requirements demand a fill. They are the same design as regular Bull Dog Clips and half the width. Made in the same sizes, for 2, 3 and 4-inch sleepers. Write for samples.



BULL DOG Floor Clips

ONE PIECE SILENT WATER CLOSET



The beautiful design, quality and construction of this fixture make it ideal for the finest installation and the moderate price makes it available for the more modest homes.

SAVES LABOR ON INSTALLATION

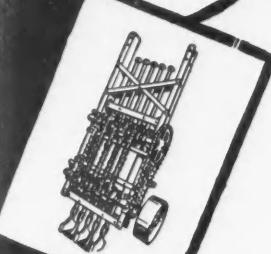
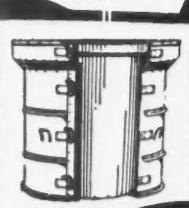
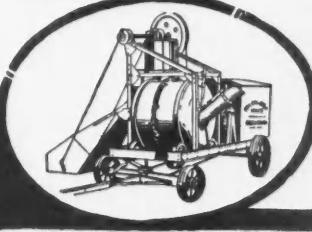
Only two connections—outlet from bowl and supply to tank. Comes all in one piece—no tank to attach to wall. Can be installed in any roughing-in twelve inches or over.

Non-overflow, quiet in operation and is made of the highest grade vitreous china. Cover fastened to tank. High quality fittings throughout. Furnished with either white or mahogany seat.

*Write for full details on our
complete line of supplies*

BOWMAN SUPPLY & MFG. CO., Inc.
878-894 Progress St.
Pittsburgh, Pa.

MORE CASH-LESS LABOR


CRESCENT Concrete Machinery is money making equipment, built for quantity production without breakdowns. Our prices to you mean real savings in first cost and the quality of our machines means bigger profits for years to come with less back breaking labor.

Write for Free Bulletin!

CRESCENT Sewer Pipe and Tile Moulds, Catalog 11 and Bulletin 33.

Brick Machines, hand, foot and power. Catalog 32.

Bull-dog batch Mixers. Catalog 37.

Bull-dog Tilter Mixer, Bulletin 42.

Power Block Tamers, Bulletin 36.

CRESCENT Continuous Mixers, Catalog 10.

Raber and Lang Mfg. Co.
828 Mill St., Kendallville, Ind.

TRADE MARK



ELASTIC GLAZING COMPOSITION

Sticks Better Than Putty Lasts Longer Costs Less

That's why our ELASTIC GLAZING COMPOSITION is approved and used by builders generally. That's why it is used by the Penna. and D. L. & W. Railroads.

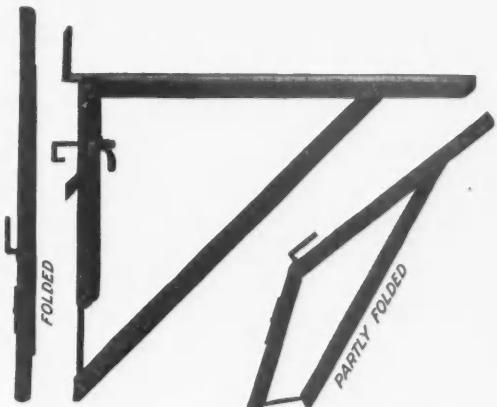
That's why it's in use from top to bottom of the highest office structure in the world—the Woolworth Building.

It Will Pay You To Try It Out

A generous free sample will be sent you upon application.

Prices and Literature Sent on Request

**H. B.
FRED KUHLS**
6415-21 3rd Ave.
Brooklyn, N. Y.



Steel Folding Builders' Brackets

Provided with hook and tail screw for fastening bracket to studding. Sway brace prevents swinging motion when bracket is in use. The strongest bracket made and the most easily applied; cost no more than a wooden bracket and lasts a lifetime. Made entirely of steel in two sizes, 3 and 4 feet long. Galvanized finish.

Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides

AURORA, ILLINOIS, U.S.A.
Branches in important centers

See page 48 this issue

(956)

**DEALERS
BUILDERS
CONTRACTORS**



The action of the "AAA" door holder is automatic, quick and certain. Open your doors and they will stay open. To close them, simply open them a little wider, releasing gravity latch and they close. A PRACTICAL DEVICE. And one that really works.

Simple, efficient. Positive under all conditions. Rust proof, attractive, durable. Installed in a few minutes. Order a pair and be convinced. Satisfaction guaranteed or money refunded.

AGENTS WANTED
Get our interesting proposition
Send Coupon Today

KNOWLSON-STEVENSON COMPANY, Ann Arbor, Mich.
Manufacturers

enclose \$3. Send a pair "AAA" door holders, prepaid. Money to be refunded if not satisfactory.

I am interested as a Dealer Contractor Builder Agent Send proposition. (Check square in which interested.)

Name _____

Address _____



Hand Power Ball Bearing DUMB WAITERS and ELEVATORS

Erection details with each outfit.
Products shipped all over the World.

PROMPT SHIPMENTS
WRITE FOR ILLUSTRATED CATALOG

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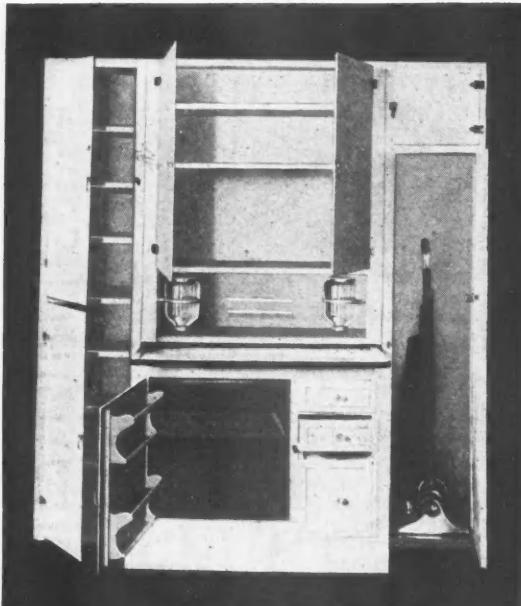
Established 1892

Incorporated 1923

1797-81 Atlantic Ave., Brooklyn, N. Y.



STEEL-MAID



No. 162 Unit Kitchen

The above unit is one of our many styles of steel kitchenette arrangements. Steel-Maid quality and design is also available in Unit cabinets, Over-the-sink cabinets, Table cabinets, kitchen tables, Broom cabinets, Ironing board cabinets, etc.

Send for our complete catalogue. Distributors wanted where we are not represented.

Continental Steel Products Co.

Formerly Cicero-Chicago Corrugating Company

CICERO, ILL. (Suburb of Chicago)

New York Representative, WALKER SALES COMPANY, 103 Park Avenue, NEW YORK, N.Y.



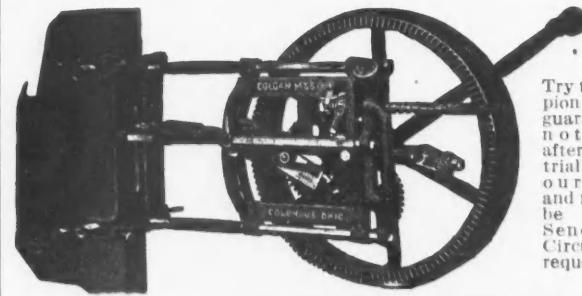
We also make motor-driven model, especially suitable for large jobs. Ask us about it.

No Guess Work with

Champion Mortiser
Cuts a Perfect Mortise in a Minute or Two

No matter if wood be hard or soft, end wood or wood full of dowel pins, you can always make a perfect mortise with the Champion Mortiser. No chance to go wrong once properly set; no guessing. Five to ten times faster than any other method and every mortise has straight sides, smooth bottom and uniform depth. Saves time and labor. Carried anywhere; weighs but 25 lbs. Cuts mortises $\frac{1}{4}$ " to $1\frac{1}{4}$ " wide and any length from round hole to 6" slot. Year's guarantee with each machine. Shipped complete with any two bits (choice $\frac{1}{4}$ " to $\frac{7}{8}$ ") at \$40.00 f. o. b. factory. Extra bits up to $1\frac{1}{4}$ ", \$2.00 each. Send for a Champion today!

The Colgan Machinery & Supply Co.
403 Hayden Bldg. Columbus, Ohio



Try the Champion on our guarantee. If not satisfied after ten days' trial, return at our expense and money will be refunded. Send today. Circular upon request.

LUFKIN



ALUMINUM RULES

ACCURATE DURABLE LIGHT WEIGHT RUST PROOF

These rules are of special hardness, therefore hold their shape well.

Distinct sunken black markings. Solid brass joints.

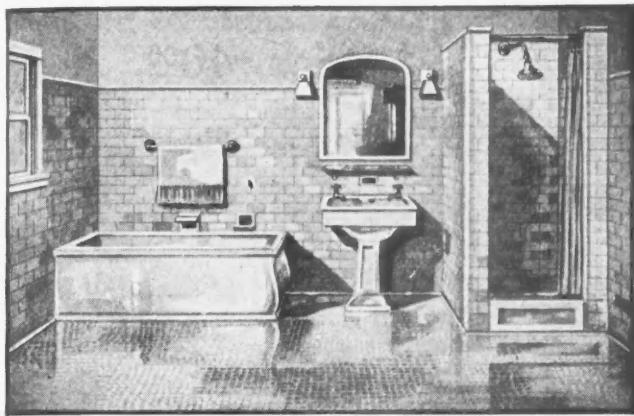
Can be furnished with Folding Hook, the feature that proved so popular on our Spring Joint Wood Rules.

CALL FOR LUFKIN RULES, BOXWOOD, SPRING JOINT, ALUMINUM, STEEL.

STOCKED BY SUPPLY HOUSES
Send for Catalog

THE LUFKIN RULE CO.

SAGINAW, MICH.
New York London, Eng. Windsor, Ont.



Put Tile in Your Bathroom

Make your bathroom as attractive as the rest of your house. Give it that spick and span clean look which tile floors and walls always have.

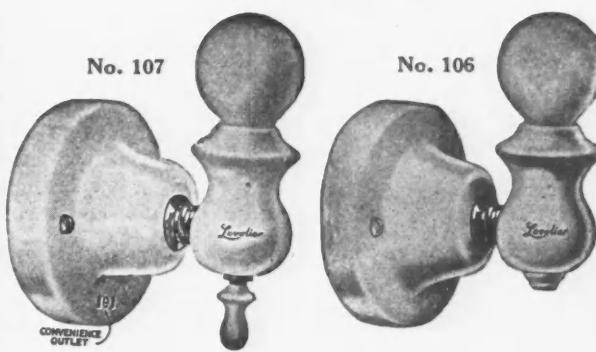
Why not use tile? It's more economical than other materials. You don't have the expense of painting walls or replacing worn out prepared floorings. Your bathroom will have that cheerful appearance which means less work for the housewife and more enjoyment for every member of the family.

Send for our attractive catalog illustrating the different designs. It's a mighty handy book to have for future reference. There's no tile better than Hornet Tile, and our prices are right.

HORNET MANTEL AND TILE CO.
2212 Locust St. ST. LOUIS, MO.

Levolier

No. 107



No. 106

Porcelain Brackets

A most serviceable and economical bracket for bathrooms, kitchens, hospitals, restaurants, beauty shops, barber shops, etc. The canopy comes either with or without convenience outlet built into it at eye height—makes plugging-in easy and keeps cord off floor. No soldering or taping necessary when making connections. Eliminates tearing up floor and wall to run extra outlet on old installations. On new work can be installed practically at cost of running additional outlet only. Metal parts polished nickel. The lever control at the bottom is convenient and efficient.

"Delights as it Lights"

Carried in stock by the best Electrical Dealers.

Send for new Descriptive Bulletin



M.C. GILL
MANUFACTURING CO.
Electrical Specialties of Quality
ESTABLISHED 1904
VALPARAISO - INDIANA



ITALIT ASBESTOS ROOFINGS

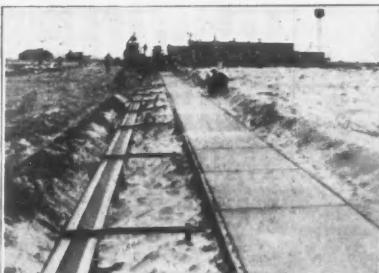
ITALIT ASBESTOS SHINGLES
for homes and all buildings where shingle effect is desired.

ITALIT CORRUGATED SHEETS
for industrial buildings, garages, warehouses, etc.

ITALIT FLAT SHEETS for walls, ceilings, electrical and insulation purposes.

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TRADING CORP.
44 Whitehall St.
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Your territory may
still be open. Write
for exclusive distribu-
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110 MILES
of Curb and
Sidewalk Near
Atlantic City
Built With

HELTZEL FORMS

Stryker Transpor-
tation and Con-
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TRENTON, N. J.
Contractors

HELTZEL



STEEL
MIXING BOXES

	Depth	Length	Width	Approximate Weight	Gauge	Price
No. 1	10 in.	5' 0"	2' 4"	80 lbs.	14	\$14.00
No. 2	10 in.	7' 6"	3' 6"	140 lbs.	14	\$18.00
No. 3	10 in.	11' 6"	4' 0"	350 lbs.	12	\$28.00

Size No. 2 is considered the best size for general use.
Steel saddle for hod support furnished when desired—\$1.50 each.

Heltzel Steel Form & Iron Co., Warren, Ohio

HELTZEL

THE WRIGHT RUBBER TILE

The Money Making Possibilities
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WRIGHT RUBBER TILE
In Your Town
—
Directions For Laying

WRIGHT RUBBER PRODUCTS CO., Dept. A. B. 3, RACINE, WIS.

Want to Get Into Business for Yourself?

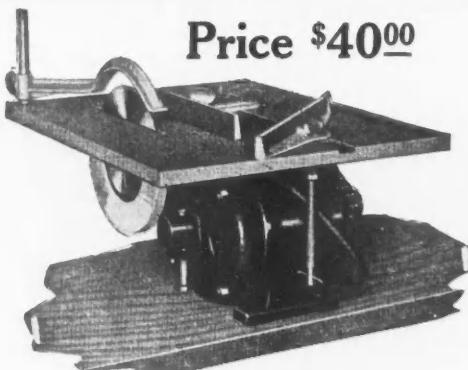
Learn how contractors, builders and floor layers are developing a fine business in selling and laying

WRIGHT Rubber Tile and Stair Treads

This new 24 page book shows how easy it is to sell and lay this long wearing, beautiful floor material.

FREE This 24 Page BOOK

Write for your copy today—Sent free prepaid without obligation.

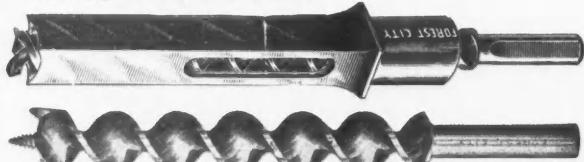


CHAMPION Portable Electric Saw

For Ripping, Crosscutting and Mitering

Table 13 1/2" x 16"

Saw 6" diameter cuts through 1 1/2" in thickness. Motor A. C. 110 volts, 1/4 horse power, weighs 44 pounds. Price \$40.00 complete with ripping gauge, bevel cross cut gauge, saw guard and lamp socket cord. Write today for illustrated circular.



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221 S. Jefferson St., Chicago, Ill.

**UNION
PORTABLE
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BENCH TYPE
WOODWORKING
MACHINES**

**IF YOU ARE
INTERESTED**
in knowing what
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do to make money
you'll send
for this free
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GALLMEYER & LIVINGSTON CO.
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KEITH'S Small House Number 100 Page Booklet Building Helps AND 32 PLANS 25c



Everyone who is planning to build, or is interested in small houses, will want this remarkable book—a favorite home-builder's guide for 25 years.

Actual photographs and floor plans for 32 recently built, ideal small homes, popular because of their beauty, convenience and economy. This 100-page edition contains many important articles on the building subjects of "Financing That New Home," "The Well-Built Chimney and Fireplace," "Inside the House," "Three Types of Roof," etc., etc.

Just send your name and address and 25 cents, stamps or coin, to

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Profitable Anti-Freeze Insurance

"R. I. W." Quick Done gives it to you at an economical rate. And it is very profitable—just as Liability, Workmen's Compensation and other forms of insurance protect you against loss and delays.



"R. I. W." Quick Done is the accelerator and anti-freeze for concrete and cement mortar. It is a scientific product that is always dependable.

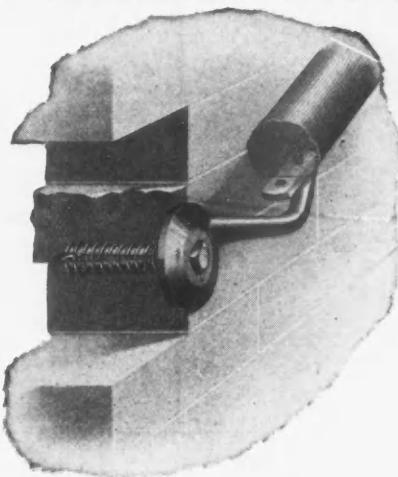
Complete information promptly forwarded on request to Dept. B.

TOCH BROTHERS

ESTABLISHED 1848

INCORPORATED 1922

Technical and Scientific Paint and Varnish Makers
443 FOURTH AVE., NEW YORK
Works: LONG ISLAND CITY, N. Y.



Stair-rail Brackets

These brackets have a 3-inch base, which assures a good bearing on the wall. They are securely held by a $\frac{1}{2}$ x 4-inch expansion bolt. Head of lag screw finished to match bracket. Made of malleable iron, they come in black enamel, antique copper or brass and bronze plated. Furnished for wood or metal rail.

Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
Branches in important centers

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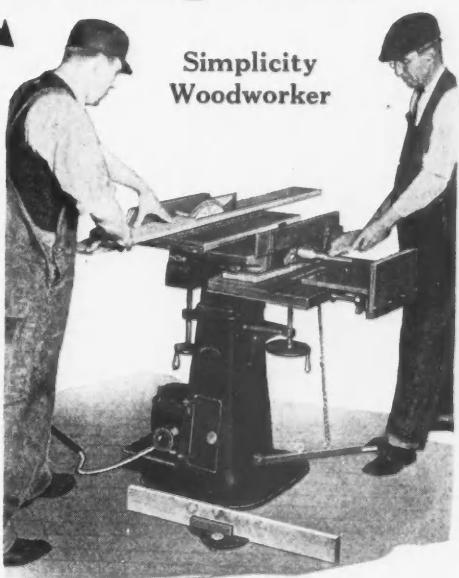
See page 48 this issue

Here's 21 Ways of Cutting Costs

The only combination machine which does

Thickness Planing

Write for folder showing the 21 ways this machine cuts your costs.



Operations include ripping, cross cutting, band sawing, coping, grooving, paneling, jointing, tenoning, mortising, sanding, tool grinding, thickness planing, boring, rabbeting, moulding, etc.

Tilting saw table and tilting fence for jointer makes all kinds of bevel

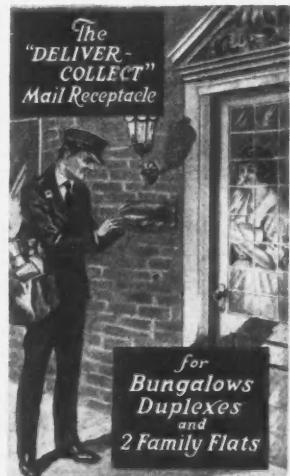
"Buy One Machine Instead of Six"

COMBINATION WOODWORKING MACHINE CO.
154 N. Desplaines St., Chicago, Ill.

cuts easy. Portable. Saws eight times as fast as by hand and saves its cost in a few weeks.

Band Saw Attachment
Highly endorsed by customers. Can be furnished with new machine or attached to machine already in service. Write for further information.

Build Homes Complete



AMERICAN DEVICE MFG. CO.
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American Device Mfg. Co.
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Gentlemen: Please send me full free information including prices on your "D-C" mail receptacle. I am interested in furnishing (number of homes) with your feature.

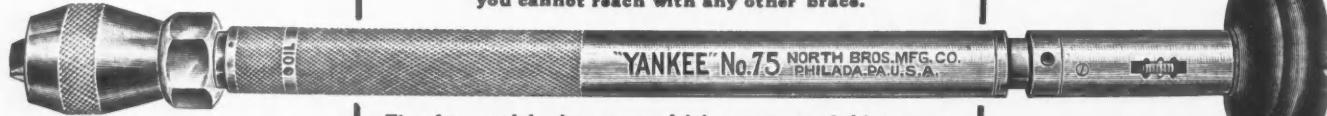
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Address.....

City..... State.....

Here's the Tool
"YANKEE" Push Brace No. 75

For Quick Work in close quarters where
 you cannot reach with any other brace.



"YANKEE" No. 75 NORTH BROS. MFG. CO.
 PHILADELPHIA, PA. U.S.A.

Fine for wood boring, screw driving, countersinking, running up nuts with socket bit, etc. Bores holes up to $\frac{1}{2}$ " in white pine and $\frac{3}{4}$ " in hard wood. Price \$5.50
ASK YOUR DEALER TO SEE THEM
NORTH BROS. MFG. CO., Dept. A. Phila., Pa.
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A postal will bring
 you our Tool Catalog

Please mention
 this magazine.

The Improved SCHLUETER

Owes its popularity to its perfectly balanced automatic roller, silent chain, solid one piece aluminum dust pan, perfect vacuum system of dust collecting, its ability to do six men's work and do it better and the total absence of vibration. This sturdy machine requires no experienced operator and will surface right up to the quarter round without the use of an edge roller.

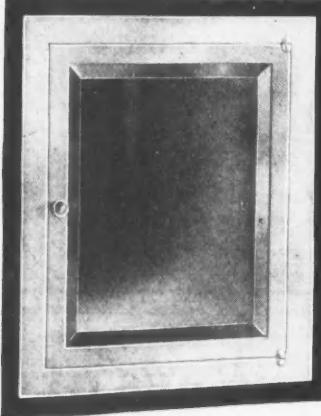
A Five Year Guarantee and a Five Day Free Trial offer absolutely protects the purchaser and makes owning a SCHLUETER easy for both large and small contractors. It will usually pay for itself with the profit on one large job.

Write for our
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 222 W. Illinois St.
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*Quality goes up
 Costs go down*



Here's an
 Unusual
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ACME
Sanitary Steel
Bath Room
Cabinets

Acme Cabinets are heavier, stronger, and more beautifully finished and enameled, but are offered at prices that mean a material saving to the Contractor and Builder.

Heavier gauge metal, coved corners, high quality baked enamel finish, strong rustless hinges, clear crystal cut glass—these words and the picture but faintly express the quality and appearance of Acme Cabinets. A credit to any Builder. Write for details.

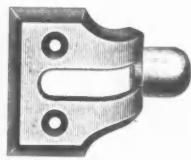
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IVES PATENT WINDOW VENTILATING LOCK

A PERMANENT FIXTURE
 PROVIDING ADDITIONAL SECURITY



Showing Window Open



Showing Window Closed

A Safeguard for Ventilating Rooms, allowing windows to be left open at top, bottom, or both top and bottom, and at the same time giving security against intrusion. Applied with a screw driver. No mortising required.

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is *Quality Hardware* and has an enviable reputation as to thoroughness of construction and excellence of finish.

For sale by the best dealers everywhere

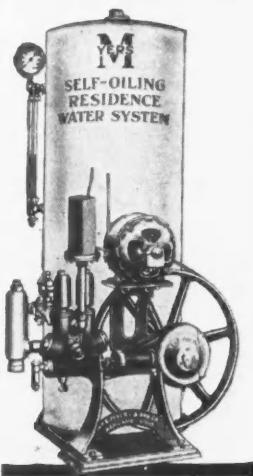
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Manufacturers of
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Myers Self-Oiling Water System for homes, farms and suburban estates—for summer resorts, cottages and hotels—wherever running water is required—they solve the problem.

The Myers line offers a complete choice of types and sizes. There are Myers Water Systems for both deep and shallow wells—and for use with city current or from home power and light systems—or for hand, wind or gas engine operation. And each model has built into it Myers Superior Engineering—Myers Quality—Myers Perfect, Workmanship.



Myers Products also include hand and power pumps, hay and grain unloading tools, barn and garage door hangers, store ladders, etc.

Ask your dealer or builders' supply house, or write us direct for catalog and information.



The F. E. MYERS & BRO. CO.
ASHLAND, OHIO
Ashland Pump and Hay
Tool Works

Base
and floor
one
continuous
piece



Imperial Sanitary Floor

Put on like Plaster—Wears like Iron

—waterproof, fireproof, resilient, noiseless, dustless

A composition material easily applied in plastic form over practically any kind of floor. Laid about $\frac{1}{8}$ inch thick. Imperial floor does not crack, peel or come loose from foundation. A continuous, fine-grained, smooth, non-slipping surface. No crevices to gather grease, dirt, dust, disease germs or moisture.

Ideal Floor for Kitchen, Pantry, Bathroom, Laundry, Porch, Garage, Restaurant, Theatre, Hotel, Factory, Office Building, Railroad Station, Hospital—wherever a beautiful, substantial floor is desired. Several practical colors. Full information and sample FREE of your first and second choice of colors.

Imperial Floor Co., 1-7 Halstead St., Rochester, N. Y.
A Success for 15 Years



Investigate Now A Fireplace "READYBUILT"

cast in one solid unit. Stronger and more beautiful than brick.

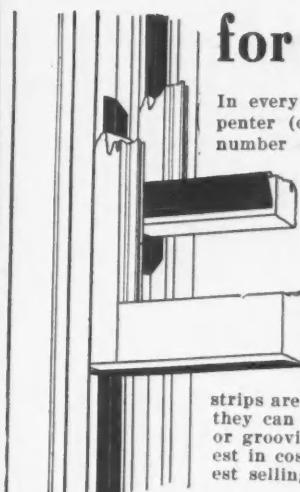
Can be used for gas, electricity, or coal, and installed by handy men in one hour.

Shipped anywhere.

Agents Wanted

Pioneer Fireplace & Supply Co.
5327 W. Lake St. CHICAGO
Catalog on request

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A. B. C. WEATHERSTRIPS

You can double your income right now by installing A.B.C. Weatherstrips under our plan which brings the jobs as fast as you can handle them. A.B.C. Weatherstrips are the most efficient, and because they can be installed without removing or grooving the sash, they are the lowest in cost. That makes them the fastest selling weatherstrip on the market.

Send \$1.00 (Note New Address)

and we will send you, prepaid, complete material, including brass nails, for the installation of one double hung window. Make the installations with the aid of our complete directions, then show the windows to your friends and neighbors and you will understand how easy it is to sell A.B.C. Weatherstrips. Just send name, address, and one dollar, but act immediately.

The Hoffbauer Co., Inc.,
16-20 E. 12th St., New York City.

I inclose \$1.00 for which please send by parcel post prepaid, the A.B.C. Weatherstrip material needed for one double hung window, with directions for installation.

Name.....

P. O. State.....

St. or R. F. D.

**PRESTO
SLIDING STAIRS**
"Works like Magic"

ANOTHER
20TH CENTURY
ACHIEVEMENT

MAKES AN EXTRA
ROOM AVAILABLE

TAKES UP NO
SPACE BELOW

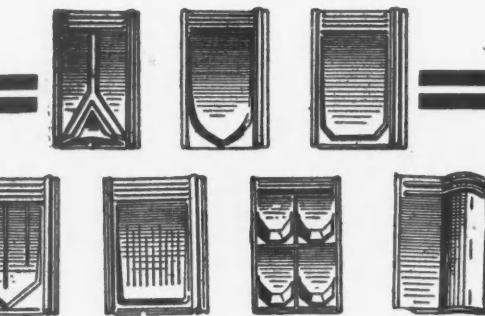
ADDS FROM \$500
TO \$1000 TO THE
VALUE OF ANY HOME

SAFE & SIMPLE
TO OPERATE

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Sash Chain for a
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RUSTPROOF—FIREPROOF
double hung sash suspension

It will neither break, kink nor stick

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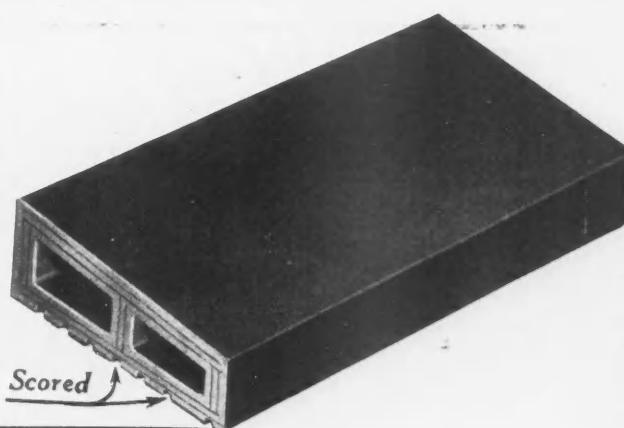
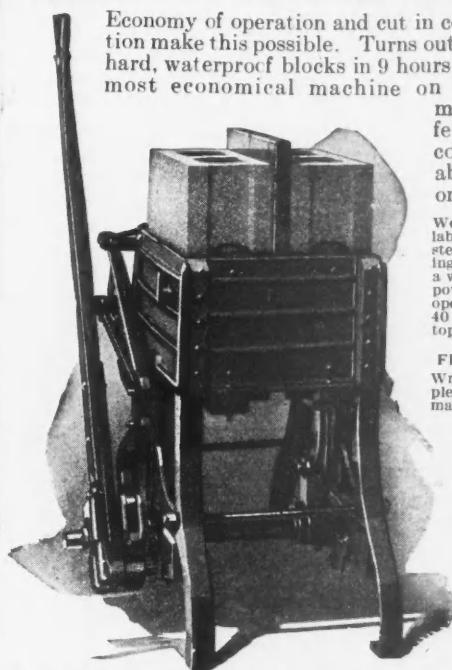
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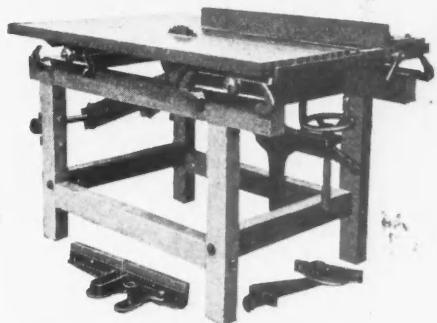
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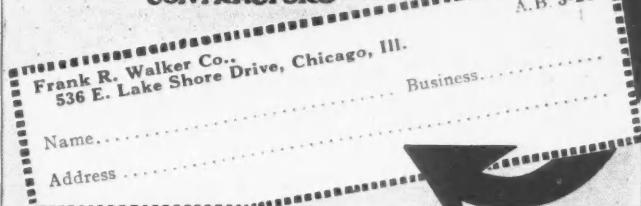


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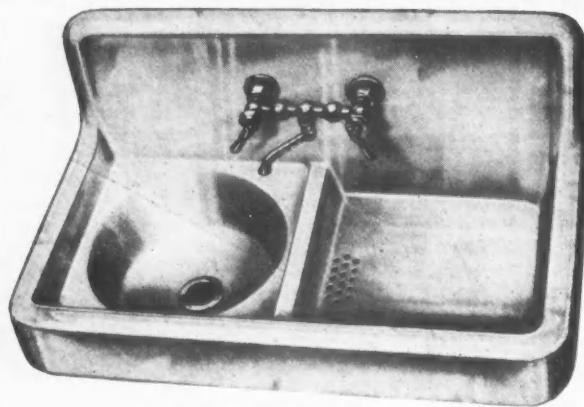
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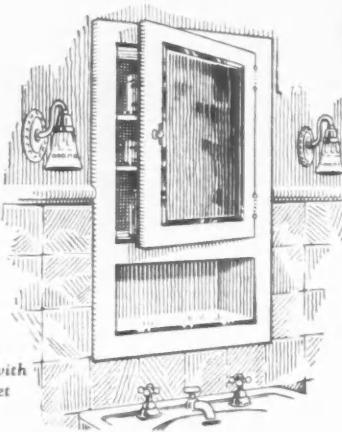
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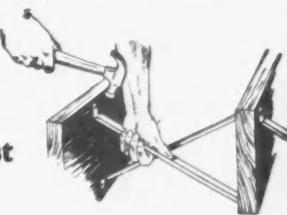
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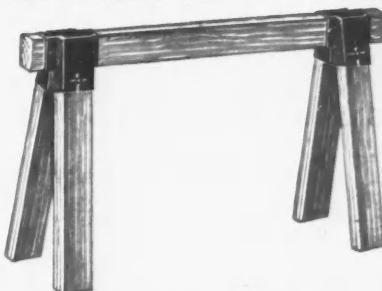


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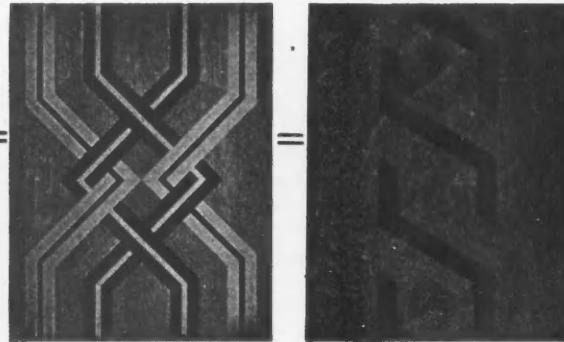


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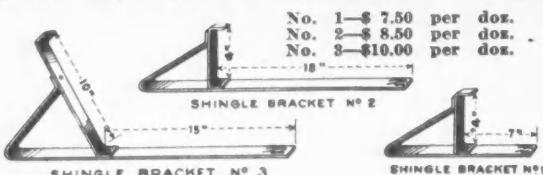
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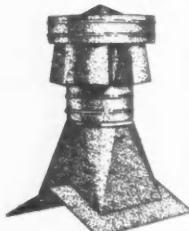
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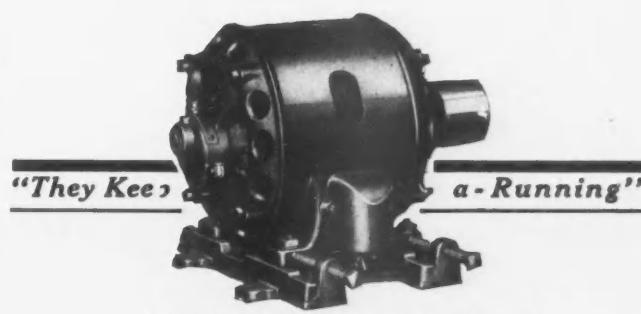
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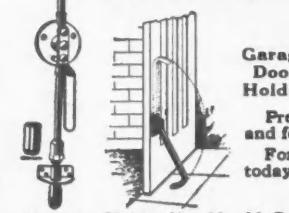
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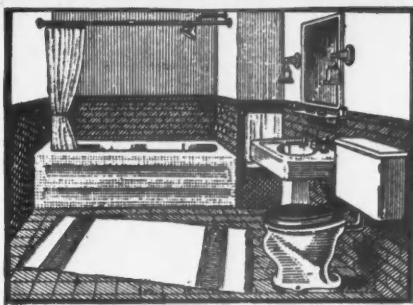
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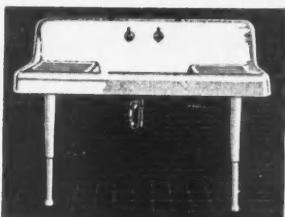
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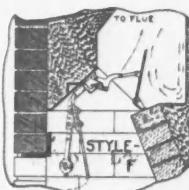
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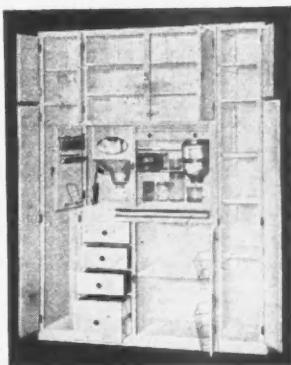
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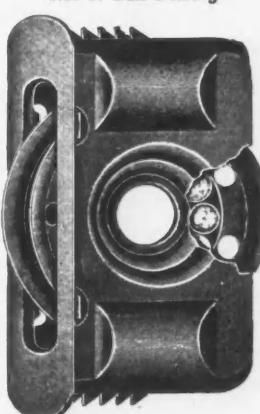
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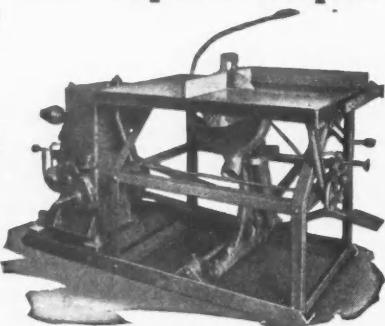
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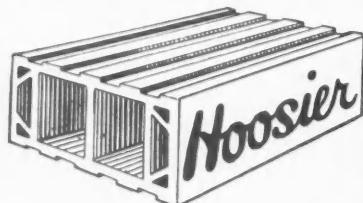


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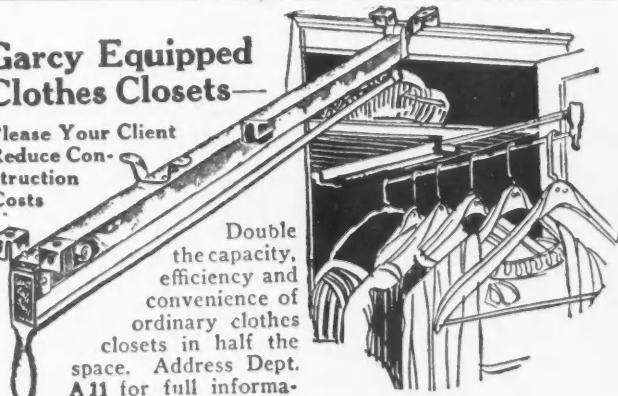
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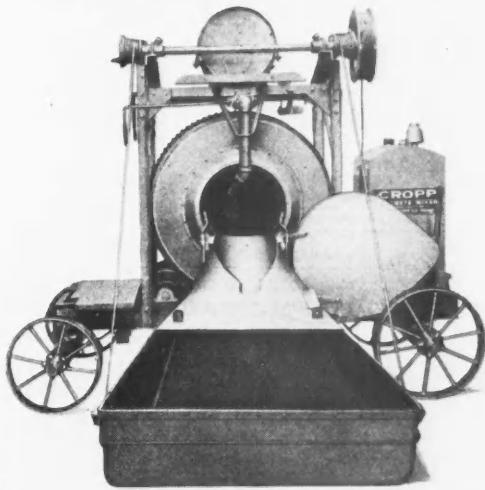


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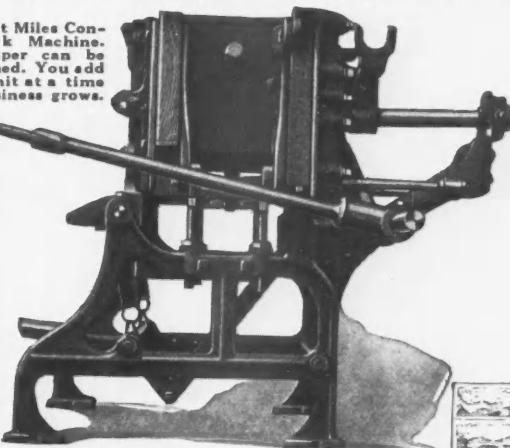
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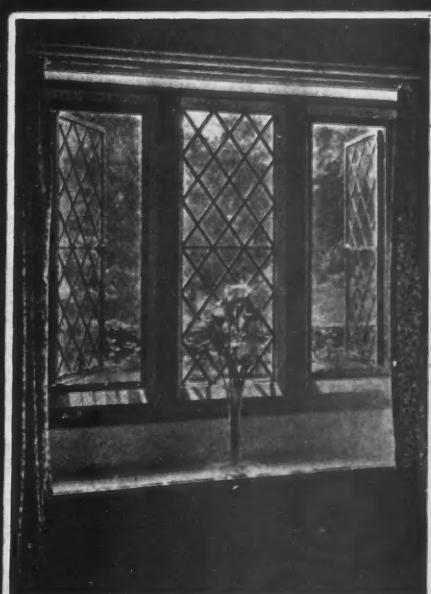
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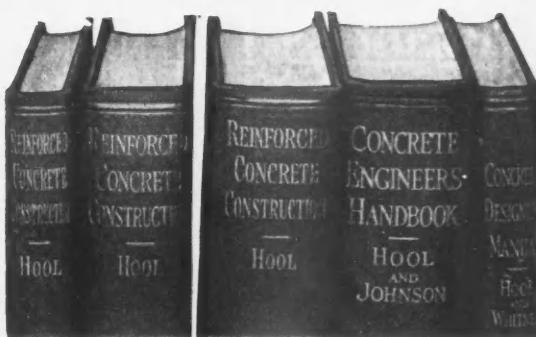
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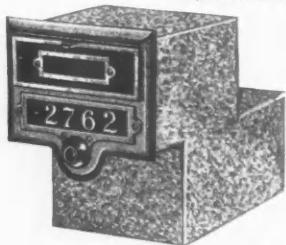
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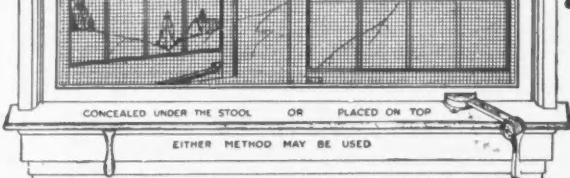
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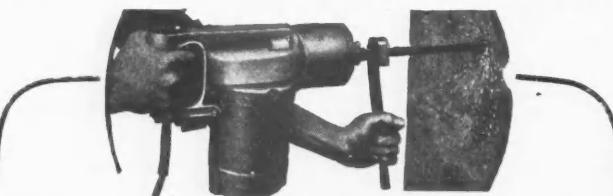
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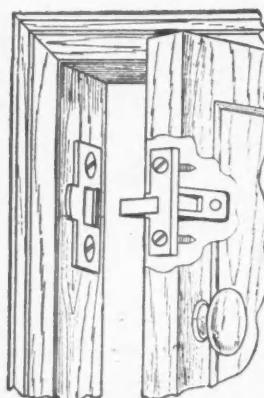
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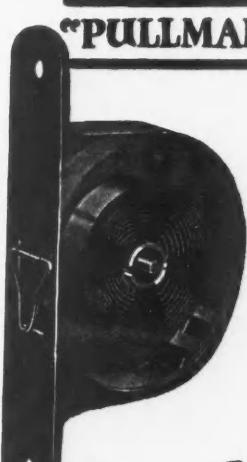
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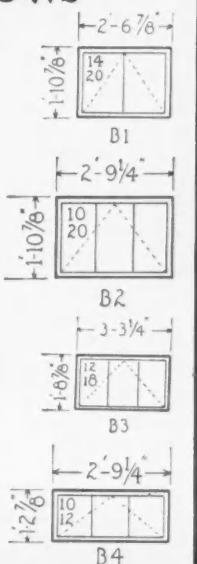
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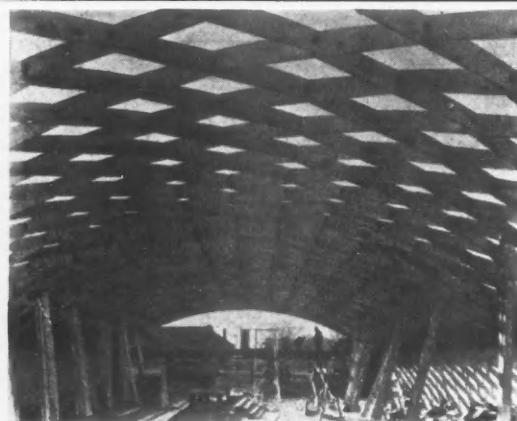
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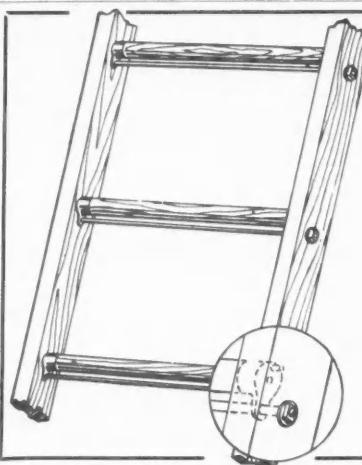
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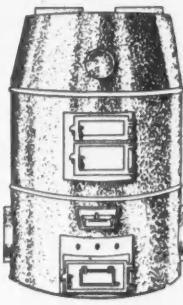
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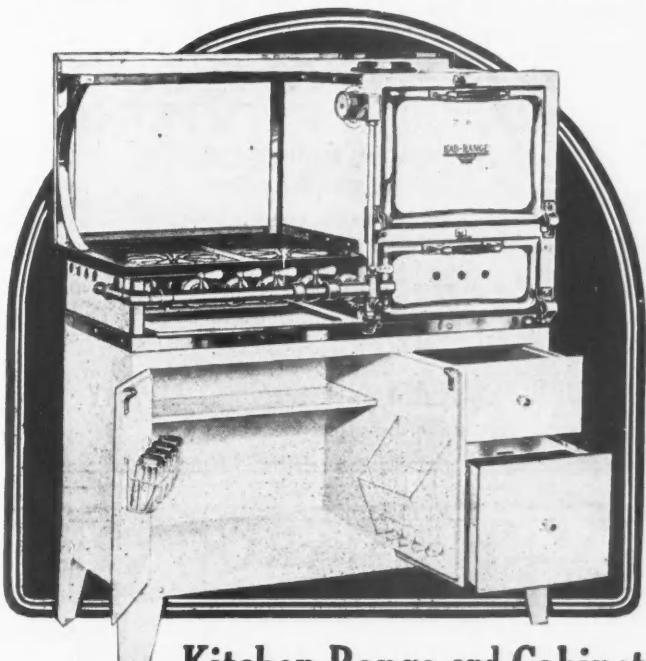
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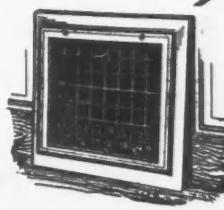
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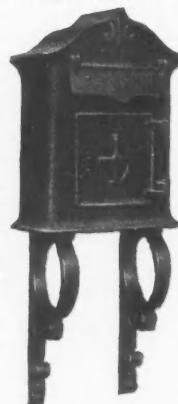
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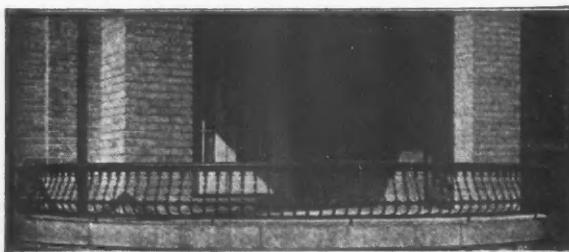
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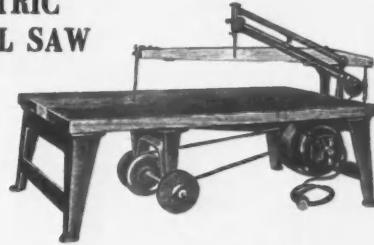
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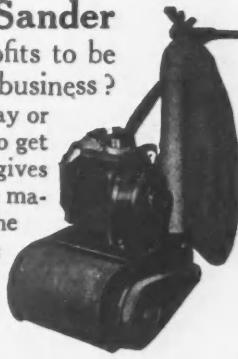
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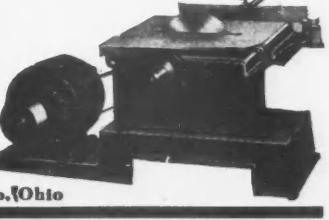
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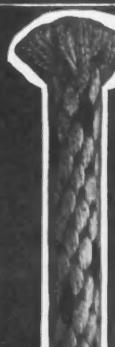
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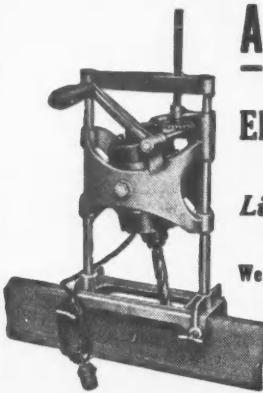
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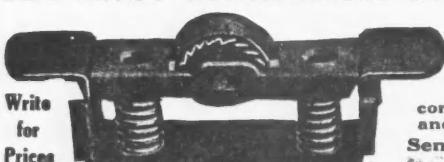
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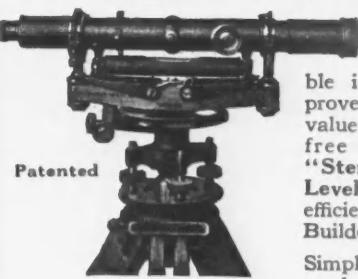
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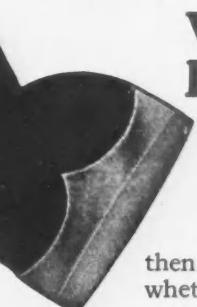
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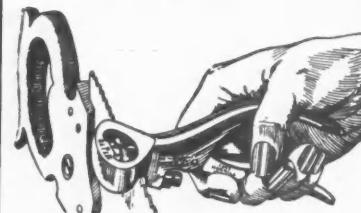
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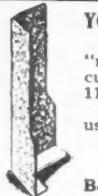
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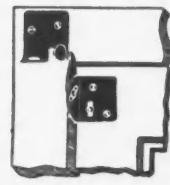
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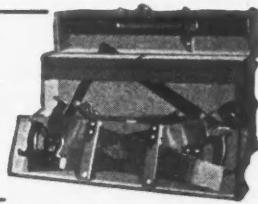
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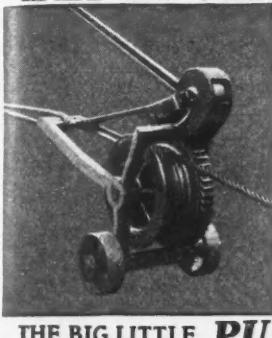
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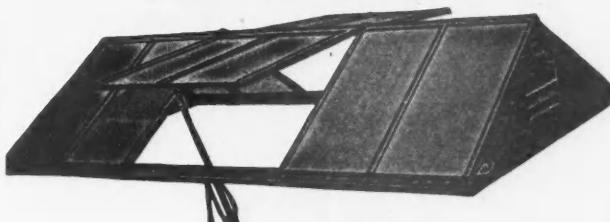


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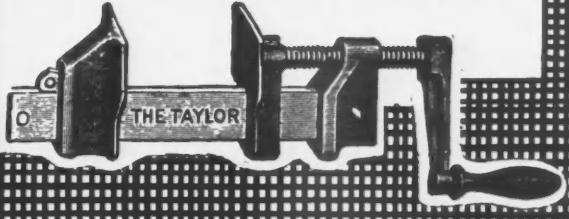
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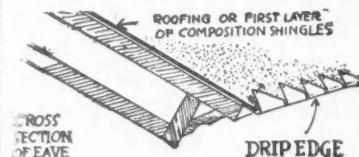
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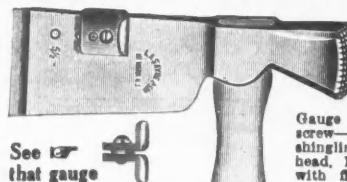
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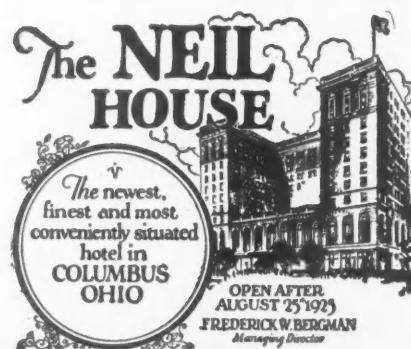
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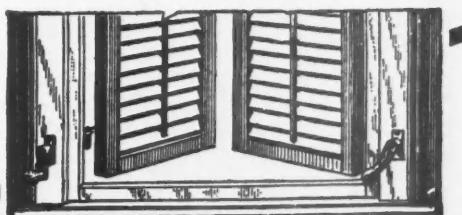
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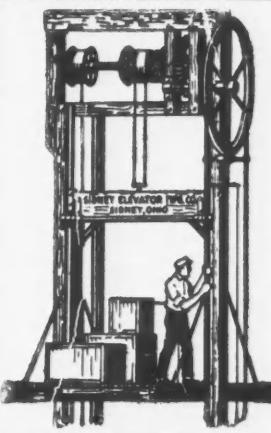
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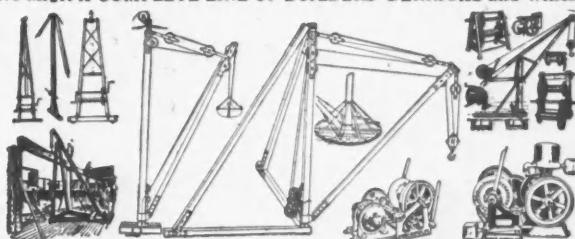
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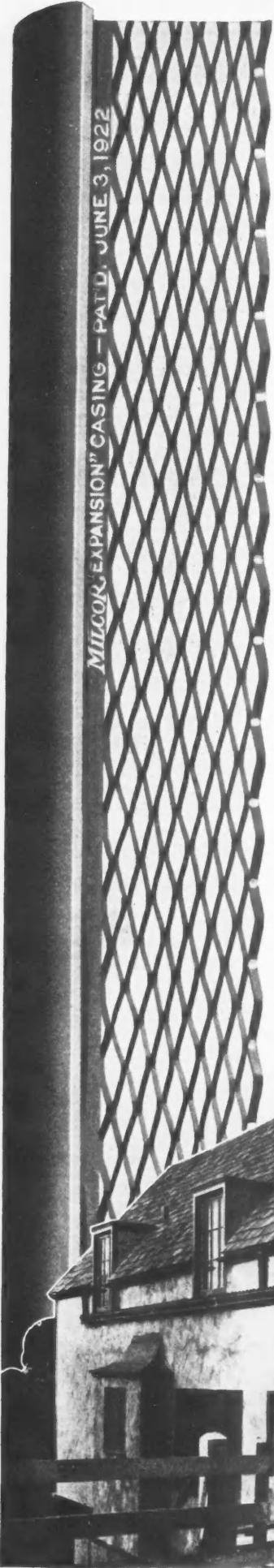
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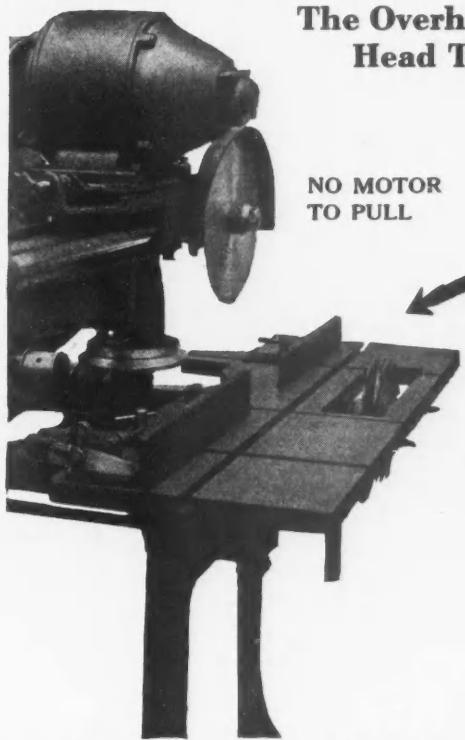
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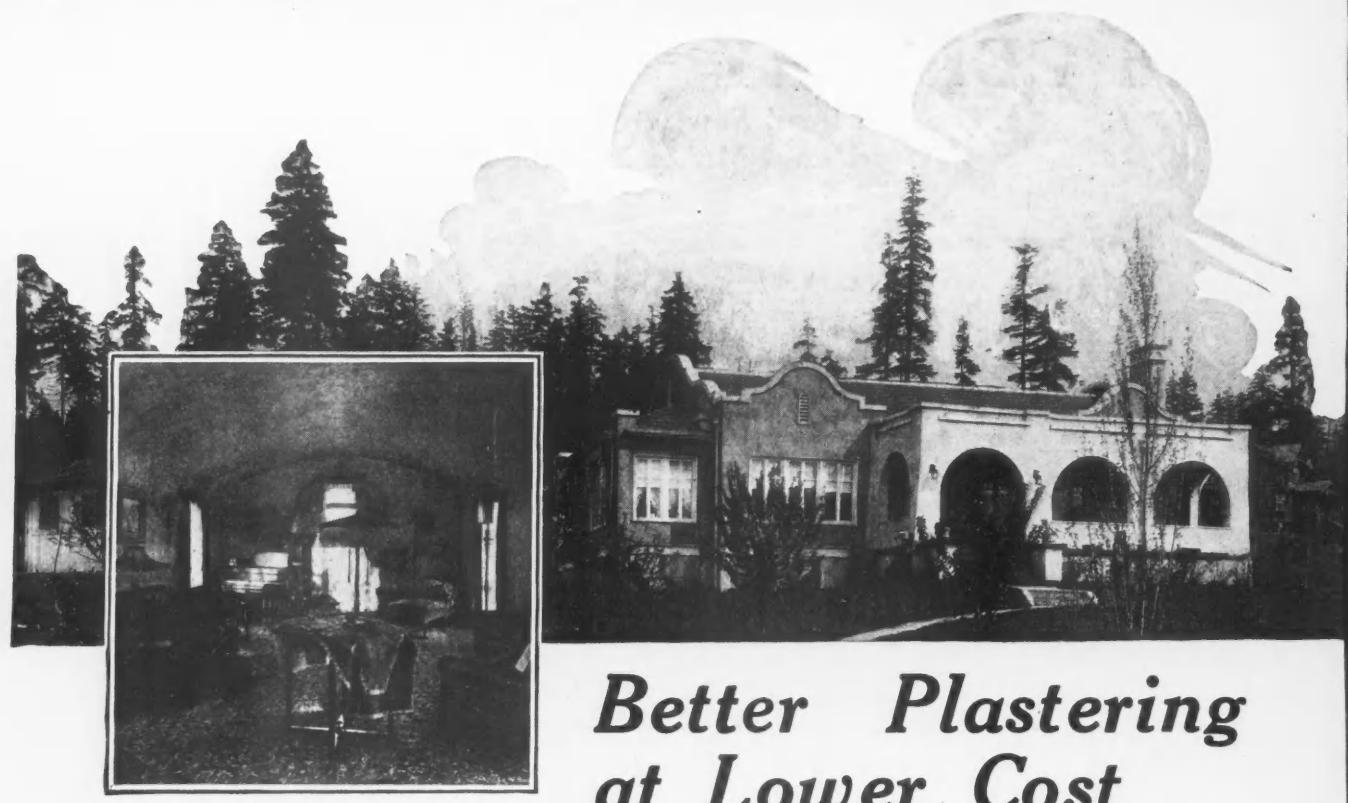
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